DOCUMENT RESUME

ED 362 658	CE 064 565

AUTHOR	Mahaffey, Darlena; Patton, Jan
TITLE	Microcomputer Applications. Teacher's Guide, Revised Edition and Addendum.
INSTITUTION	East Texas State Univ., Commerce. Educational Development and Training Center.
SPONS AGENCY	Texas Education Agency, Austin. Div. of Vocational Programs.
PUB DATE	92
NOTE	713p.; For simulations and test bank, see ED 350 484.
AVAILABLE FROM	Educational Development and Training Center, East Texas State University, Commerce, TX 75429 (order nos. BO-301-TG and BO-301-AD1: $40; call for quantity discounts).
PUB TYPE	Guides - Classroom Use - Teaching Guides (For Teacher) (052)
EDRS PRICE	MF04 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	Annotated Bibliographies; Behavioral Objectives; *Competency Based Education; *Computer Oriented Programs; Information Management; Information Processing; Integrated Curriculum; Learning Activities; Lesson Plans; *Microcomputers; *Office Occupations Education; Secondary Education; Spreadsheets; State Curriculum Guides; Teaching Guides; Units of Study

ABSTRACT

This teacher's guide provides office education instructors with detailed units of instruction correlated directly to the essential elements of a course in microcomputer applications as mandated by the Texas Education Agency. Sixteen instructional units are organized into six sections on the following topics: introduction to microcomputers, word processing, information management, electronic spreadsheets, information processing tools, and closure. Each unit includes the following materials typically constituting teacher guides: lesson plan, content outline, teacher activities, activity and competency matrices for domains and basic skills, competency tests, and answers for student activities and competency tests. Student guides in each unit contain some or all of the following: unit objective, student competencies, terminology, unit overview, and activities. Appendixes include over 300 reference addresses, a course competency checklist, suggested equipment list, test bank revisions, course descriptions, office education essential elements, lesson plan development guidelines, and guidelines for adapting instruction for special needs students. Provided in a separate addendum are annotated listings of several hundred publications dealing with various areas of computers/computing, a list of publisher addresses, six matrices designed to help teachers identify curriculum integration possibilities, and guidelines for using the matrices. (MN)

ED 362 658

MICRO-COMPUTER APPLICATIONS

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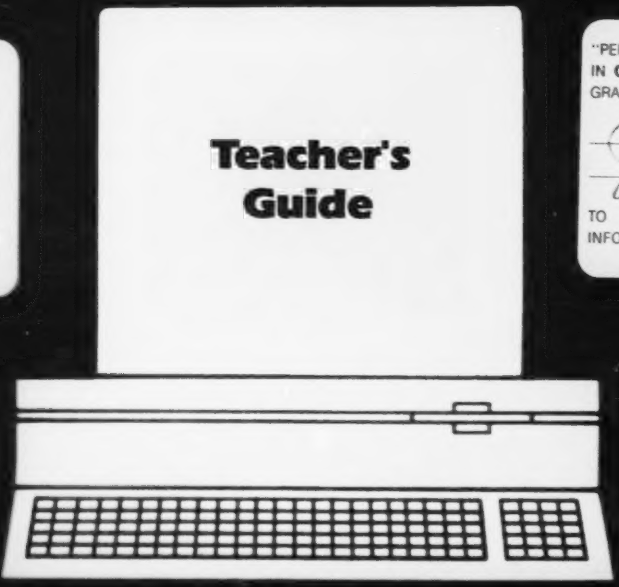

Teacher's Guide

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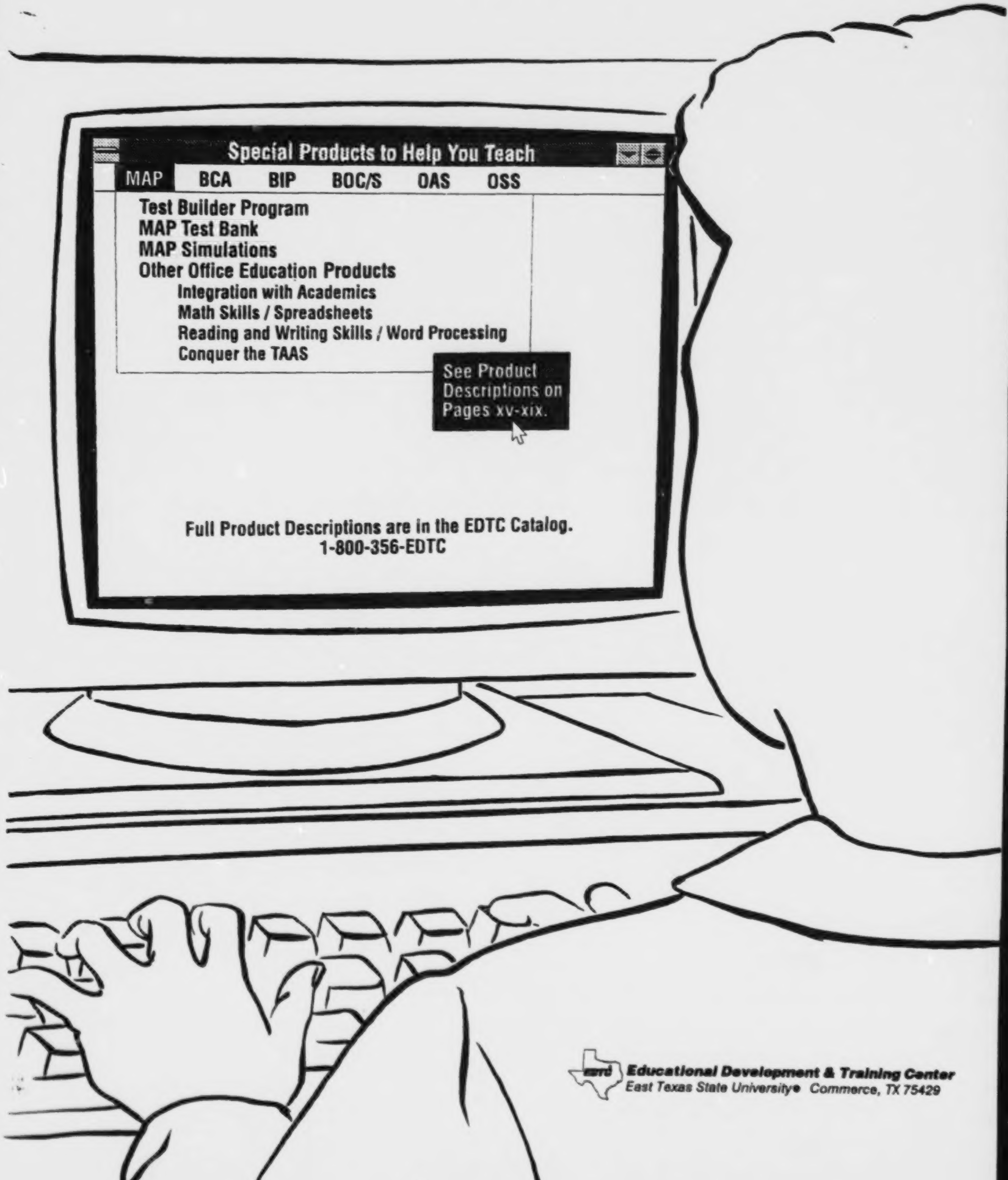

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See Product Descriptions on Pages xv-xix.

Full Product Descriptions are in the EDTC Catalog.
1-800-356-EDTC

Educational Development & Training Center
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Microcomputer Applications

Teacher's Guide

Revised Edition
Prepared by

Darlena Mahaffey
Technical Writer

Jan Patton
Office Education
Curriculum Coordinator

Published by
Educational Development and Training Center
East Texas State University
Commerce, Texas

in cooperation with
Texas Education Agency
Vocational Education Programs
Austin, Texas

BO-301-TG

REVISED EDITION

1992

First printing 1988—500 copies
Second printing 1989—400 copies
Third printing 1991—100 copies
Revised edition 1992— 400 copies

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To ensure education equity, this material has been reviewed to eliminate bias or stereotyping.

Educational Development & Training Center
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1-800-356-EDTC

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Acknowledgments

Special gratitude and appreciation is extended to the following persons for their cooperation in planning, writing, reviewing, and evaluating the materials developed through this project.

Texas Education Agency

Robert K. Gordon, Office Education Program Director
Dorothy Baum, Office Education Program Specialist
David Childs, Office Education Program Specialist

Revised Edition

Special credit is extended to the support staff of the Educational Development and Training Center for their continuous support and desire to work as a team.

Cindy Johnson, Student Worker
Ludonna Jackson, Editor
Lynne Morris, Proofreader
Bob Norsworthy and Aaron Pendland, Graphic Artists
Linda Baron, Word Processing Specialist

First Edition

Special thanks to Shirley Bray, Andy Fitch, and Virginia Salter who made contributions to the development of the first edition of *Microcomputer Applications Curriculum Guide*.

Preface

The curriculum for microcomputer applications was prepared to provide quality instructional materials for instructors of microcomputer applications courses in Texas. This guide serves as a basis for achieving the office education essential elements mandated by the Texas Education Agency.

This teacher's guide has been developed through a joint effort of the Texas Education Agency and the Educational Development and Training Center located on the campus of East Texas State University in Commerce, Texas.

The purpose of developing this guide is to provide office education instructors with a teacher's guide that includes detailed units of instruction correlated directly to the essential elements. Suggestions and comments concerning this teacher's guide are requested and should be sent to the Curriculum Coordinator at the Educational Development and Training Center, ET Station, Commerce, TX 75429.

Organization of the Teacher's Guide

Each instructional unit in the office education *Microcomputer Applications* teacher's guide is correlated to the office education essential elements mandated by the Texas Education Agency. The basic components of the guide are the section pages which are considered the teacher's guide, the unit pages which are considered the student's guide, and the appendices which are collections of useful, pertinent information.

Section Pages

Each section is considered the teacher's guide for the units covered in that section. The section pages help the instructor plan and prepare for each unit. Each section has the following components.

- ☐ **Essential Elements**—covered in the section are identified by number.

- ☐ **Suggested Unit Lesson Plan**—designed to serve as guides for the preparation of daily and weekly lesson plans and as a basic curriculum outline.

  - ▲ **Objective Page**—lists section and unit titles, essential elements, suggested number of classroom hours, unit objectives, student competencies, focus, learning domains, and basic skills statements.

  - ▲ **Content Outline**—a broad overview designed to give the major emphasis of the unit.

  - ▲ **Suggested Teacher Activities**—reminders of the four basic areas teachers need to address in every unit. The first three are general preparations and are the same in all units. The fourth one varies with each unit.

    - **Teacher Preparation** activities are concerned with lesson analysis and general material preparation.

    - **Teacher Presentation** activities are concerned with methods for optimum classroom learning.

    - **Reteach Activities** review steps in formative evaluation.

    - **Specific Teaching Activities** assist the teacher in specific materials preparation for that unit. Suggestions for bulletin boards, equipment, guest speakers, and field trips are made and special instructions for activities and tests are given.

☐ **Activity/Competency Test Matrices for Domains and Basic Skills**—the student activities and tests in these units were designed with the cognitive, psychomotor, and affective domains in mind. Purposeful attention was also given to using and reinforcing reading, writing, and mathematics skills. Two matrices are provided to help the instructor quickly see where clear correlations exist.

☐ **Competency Tests**—can help the instructor make a judgment about student progress toward predetermined standards. The standards in this program reflect those established by the business community for entry-level employees.

Competency tests are provided for each unit. These tests measure the students' understanding of the information covered in the unit overview and are queued to the essential elements. Test items can be used in a formative way as pretest measures, reviews, or for oral quizzes. The instructor should construct additional test items for any objectives and information added to the unit. It is important that students understand the criteria that are used to evaluate their competency in a given area. Other information on student evaluation is included in Appendix G—*Lesson Plan Development.*

The evaluation instruments in this teacher's guide can be used in various ways. For example:

▲ **Individualized Instruction**—after reading the unit overview and/or taking notes from the instructor, the student completes the activities. After successfully completing the activities, the student takes the competency test. If the test results show a weakness in a specific portion of the unit, the student should review that portion of the unit overview, complete reteach activities provided by the instructor, and retake that portion of the test.

▲ **Group Instruction**—after participating in classroom discussion and completing the student activities, the students should be able to demonstrate mastery of items listed in the competencies. The competency test can be used to measure students' progress toward meeting these competencies.

▲ **Remedial and Reteach Instuction**—students who demonstrate a poor understanding of the subject matter need remedial help. Selected reteach activities are provided in the Suggested Teacher Activities in the Suggested Unit Lesson Plan.

☐ **Answers to Activities and Competency Tests**—answers are provided for most activities and competency tests in the unit. Because of diversified programs, equipment, teaching styles, and student backgrounds, some activities and test questions are best evaluated to the satisfaction of the instructor. Where appropriate, suggestions for such evaluation are given.

Unit Pages

The unit pages can be used in a variety of ways, such as a primary resource guide for the beginning instructor; a teacher information base to be supplemented with additional textbook information, periodical supplements, and other background experiences; or on an information base for students that will be reinforced with additional material and lectures. Unit pages are made up of the following components.

☐ **Objectives/Competencies**—the first page of each unit states the goals of the unit to provide a sense of direction and accomplishment for both the student and the instructor. Two types of objectives are provided:

- ▲ Unit objectives state what the student is expected to achieve by completion of the unit.

- ▲ Student competencies state what the student is expected to do to master the unit objectives.

Each unit of instruction uses the "golden thread" approach. Identifed student competencies are addressed in the unit overview, activities, competency test, and competency checklist. For example, the first competency listed is developed through activity one and evaluated through the first part of the competency test.

The lists of competencies provide direction for the learning process. The instructor might want to discuss the objectives with the students prior to covering the information in the unit to provide a common understanding of the intent of the objectives.

The essential elements describe minimum competencies. Instructors should modify competencies developed through these materials to the needs of their own students and programs. When competencies are added, corresponding information, activities, and evaluation procedures should be designed.

☐ **Focus**—tells "Why" or the purpose for the unit to be studied.

☐ **Terminology**—computer courses have their own characteristic idiom and technical vocabulary. A terminology list with definitions is provided for most units.

☐ **Unit Overview**—the unit overview specifically addresses the essential elements. It condenses current information to meet the cognitive (knowledge) objectives of the unit. The instructor will find that the unit overview can serve as an excellent guide when presenting background information. Information may be presented in several ways.

- ▲ The instructor may use the unit overview as a guide for presenting the background knowledge necessary for students to complete the specific competencies and, ultimately, the unit objective; or

- ▲ Students may be allowed to use the unit overview as a basic text. It provides a common information base to which students can add research findings or lecture notes.

☐ **Activities**—the learning activities are keyed directly to the student competencies. They are designed to provide a direction to study; promote growth in the cognitive, psychomotor, and/or affective domains; and accommodate the learning styles of students. An effort has been made to incorporate the following elements of the learning process: translation, interpretation, application, analysis, synthesis, and evaluation.

The activity sheets can be completed in class or used as homework assignments. The instructor should preview the activities prior to making student assignments to assure that information has been taught, and that all required supplies and equipment are available. Specific Teacher Activities are presented in the Suggested Unit Lesson Plan. Class time should be set aside for those activities that require group participation and other small group work projects. Answers to the activities are included in the section pages for the individual unit.

Appendices

☐ **Appendix A**

Resources—provides names and addresses for publishers, software vendors, microcomputer directories, electronic information services, magazines/periodicals/newsletters, services and reports, professional organizations, professional publications, and other business publications.

☐ **Appendix B**

Course Competency Checklist—provides the instructor with a competency checklist for the entire course to include levels of student achievement. It may be used as a competency profile.

☐ **Appendix C**

Suggested Equipment List—provides a suggested list of equipment and supplies recommended for the course.

☐ **Appendix D**

Microcomputer Applications Test Bank Revisions—provides a revised version of the test bank coordinated with this edition and the previous test bank version.

☐ **Appendix E**

Course Descriptions—provides a description of each of the office education courses.

☐ **Appendix F**

Office Education Essential Elements—lists all the office education essential elements.

☐ **Appendix G**

Lesson Plan Development—provides the instructor with a suggested format for developing lessons, a copy of Bloom's Taxonomy, and suggested verbs to use with each level.

☐ **Appendix H**

Special Needs—suggests ways of modifying the office education curriculum for handicapped students.

Special Product Descriptions

Test Builder and Test Bank

The following products were designed specifically for the microcomputer applications course and are available from the Educational Development & Training Center, 1 (800) 356-EDTC.

■ The Test Builder Program

Format Catalog No.
MS-DOS 3½—BOI-3203-TBP
MS-DOS 5¼—BOI-3205-TBP
MAC 3½—BOM-3202-TBP

The *Test Builder Program* helps a teacher construct, administer, grade tests and print the results. The time for test preparation and grading is reduced because the input of questions is simplified and the test is graded by the computer.

The computerized test consists of true/false, multiple choice, or matching questions. When the questions are displayed on the screen, they appear in random order; therefore, they will not appear in the same order on any two computers. This reduces the opportunity for students to cheat. After the student answers all of the questions, the program grades the test and records the grade on the student's data disk. A compilation of the student's name, grade, and questions missed can be copied to the teacher's data disk for storage, analysis, and printing. The number of the question that was incorrectly answered can be checked on the competency matrix to determine if the student has mastered the competency.

All question formats can be modified or deleted; however, only existing true/false and multiple choice test bank files can be used to create a new test bank. A hardcopy of the test, answer key, and an answer sheet can be printed for all tests.

■ Microcomputer Applications Test Bank

Format Catalog No.
MS-DOS 3½—BOI-3013-TBK
MS-DOS 5¼—BOI-3015-TBK
MAC 3½—BOM-3013-TBK

The *Microcomputer Applications Test Bank* has been revised to match the information contained in the revised version of *Microcomputer Applications Teacher's Guide*. The test bank is used in conjunction with the *Test Builder Program*. The questions are keyed to competencies and essential elements included in the teacher's guide. However, questions can be modified to fit your teaching style and your students' needs. You can modify the questions by following the instructions provided in the *Test Builder Program Instructions*.

If you currently have a copy of the *Microcomputer Applications Test Bank*, Appendix D contains the revisions for the test bank in hardcopy to match information in the revised guide. Follow the instructions included in this appendix.

Office Education Simulations

Simulations and student materials are available for all cluster courses and occupationally specific courses. Each simulation places the students in a specific position in a company. Student materials are available to help decrease time and cost of reproducing the material.

- **Microcomputer Applications Simulations—BO-301-SIM**
  Kandy's Kandlesticks—word processing
  High Tech Video Corporation—database
  Happy Hammer Home Builders—spreadsheet
  Office Greenery, Inc.—integration, DTP, telecommunications

- **Business Computer Applications Simulations—BO-302-SIM**
  Psychedelic Wheels—word processing
  Entertainment Sensations—database
  Video Masters—spreadsheets/desktop publishing
  Home Computing Network—computer information/telecommunications

- **Business Information Processing Simulations—BO-300-SIM**
  Carol's Cosmetic Cottage—word processing
  B & C Enterprises—spreadsheets
  Texas Country's Best Videos—desktop publishing
  Agriculture Technologies Inc.—telecommunications
  Ski On The Edge—records management

- **Business Office Clerical/Business Office Services Simulations—BO-326-SIM**
  "Hits" Unlimited—only one company is used throughout this simulation so there will be a continuity for special students. The students will complete work in the following areas: word processing/proofreading, file/data entry, desktop publishing, calculating machines, and written communication

- **Office Administrative Systems Simulations—BO-306-SIM**
  Yo-Rap Messages—keyboarding, proofreading, and editing
  Don't Disc Me—information control management
  Forever Friends Pet Store—electronic calculator
  Parties Unlimited—reprographics
  Lone Star Travel—oral/written communication
  Car Dial—communication skills

- **Office Support Systems Simulations—BO-307-SIM**
  Essex Corporation—word processing
  Smiles, Inc. Modeling Agency—communication skills
  V & S Mini Lock Manufacturing Co.—communication skills
  LYKE Radio Station—electronic calculator/financial management
  Modern Mall Insurance Co.—information control and management

If your school is using only one of the office education courses why not mix and match simulations from the other courses? Provide your students with a variety of short activities that meet the essential elements and bring them into the "real world"! You can adjust the difficulty level of each simulation by the equipment and software used or by providing additional activities.

Office Education Simulations by Skills Area

- **Computer Information/ Telecommunications**

Home Computing Network	BCAI
Agriculture Technologies Inc.	BIP
Office Greenery, Inc.	MAP

- **Information Control and Management**

Don't Disc Me	OAS
Entertainment Sensations	BCAI
High Tech Video Corporation	MAP
"Hits"—filing/data entry	BOC/S
Modern Mall Insurance Co.	OSS
Ski On The Edge	BIP

- **Keyboarding/Word Processing/ Proofreading & Editing**

Yo-Rap Messages	OAS
Essex Corporation	OSS
Kandy's Kandlesticks	BCAI
Psychedelic Wheels	MAP
Carol's Cosmetic Cottage	BIP
"Hits"—word processing	BOC/S

- **Electronic Calculator/ Financial Management**

Forever Friends Pet Store	OAS
"Hits"—calculating machine	BOC/S
LYKE Radio Station	OSS

- **Desktop Publishing/ Reprographics**

Video Masters	BCAI
Texas Country's Best Video	BIP
"Hits"—desktop publishing	BOC/S
Parties Unlimited	OAS
Office Greenery, Inc.	MAP

- **Communications**

V&S Mini Lock Manufacturing	OSS
Smiles Inc. Modeling Agency	OSS
Lone Star Travel	OAS
Car Dial	OAS
"Hits"—communications	BOC/S

- **Spreadsheet**

Video Masters	BCAI
B & C Enterprises	BIP
Happy Hammer Home Builders	MAP

Common Essential Elements

If the microcomputer application cluster course is taught as a vocational course common essential elements must be taught in addition to the essential elements for the course. A unit of instruction has been developed around each topic area. The units are composed of flexible modules which can be easily used when the class is in transition. This allows the common competencies to be addressed without diluting the curriculum.

Leadership	BO-310-CE1
Successful Employment	BO-310-CE2
Entrepreneurship	BO-310-CE3
Safety	BO-310-CE4
Human Relations	BO-310-CE5
Personal and Business management	BO-310-CE6
All six units together:	BO-310-TG

Additional Support Materal

The following products are recommended as additional support material for use in the classroom. Most products are neither course nor program specific.

- ▲ **Office Education Quality Guide**—BO-315-TG—Contains rules and regulations for establishing and maintaining office education courses.

- ▲ **Integrating Academic Principles into Microcomputer Applications**—BO-402-LP—Microcomputer applications lesson plan modules correlate the four academic areas: language arts, mathematics, science, and social studies. Each references both academic and office education essential elements. Also included is a matrix referencing the information with TAAS objectives.

- ▲ **Building Math Skills With Spreadsheets**—JS-500-TG—Workbook designed to improve students' math skills through spreadsheet activities. Activities address operations and problem-solving, both areas tested by TAAS. Lessons are designed for use with all spreadsheet software.

- ▲ **Building Reading and Writing Skills Through Word Processing**—JS-501-TG—Workbook designed to enhance reading and writing skills while mastering word processing skills. An instructor can cover course essential elements and build reading and writing skills at the same time. Each unit is set up as a lesson plan with a stated objective and instructor/student instructions. Materials can be used on any computer with any word processing software. The exercises address topics such as self-esteem, interpersonal skills, and how to be successful on the job.

- ▲ **Conquer the TAAS**—LM-100-SM—Self-paced, self-diagnostic student guide will help students become acquainted with the TAAS test. Written to match the test's format, it covers all the objectives of reading and writing sub-tests. A patterned answer sheet signals and targets a specific problem for the student such as spelling, punctuation, sentence fragments or combining, and usage.

- ▲ **Data Drill**—Computerized exercises and drills build a student's keyboard and numeric keypad skills. The program is designed to check speed and accuracy, display incorrect entries, and calculate grades.

  MS-DOS 3½—JSI-3003-CS
  MS-DOS 5¼—JSI-3005-CS

- ▲ **Karl's 101 HandyHandouts**—KD-100-HH—Collection of over 220 pages of cleverly designed handouts, exercises, activities, and complete how-to lesson plans can be used to increase student motivation and involvement in the learning process. Each handout is reproducible and can be made into unique and eye-catching overhead transparencies to add pizazz to your lesson. It comes in a 3-ring binder.

- **Mower Store**—This computer software package is designed to provide practical application of spreadsheet skills, students work in groups to set up and operate a lawn and garden equipment business. *Mower Store* simulates six months of store operations and will take two to three weeks of class time.

  MS-DOS 3½—JSI-2003-CS
  MS-DOS 5¼—JSI-2005-CS
  APPLE 3½—JSA-2003-CS
  APPLE 5¼—JSA-2005-CS
  MAC 3½—JSM-2003-CS

- **Stop and Think Cards**—Famous quotes from some of the country's most well-known individuals to encourage the development of students' higher-level thinking skills and are great motivators. Printed on 8½" by 11" colored cards.

  Stop and Think Cards—GEN-100-STC
  Stop and Think Cards II—GEN-101-STC
  Stop and Think III—GEN-102-STC

75.87

(j) Microcomputer Applications (1/2 or 1 unit) shall include the following essential elements:

(1) Fundamental concepts and operational skills related to microcomputer systems. The student shall be provided opportunities to:

(A) understand the background and uses for computer systems;

(B) demonstrate competency in touch keyboarding, including technique, speed, and accuracy;

(C) understand the components of computer systems, including hardware, operating environments, and application software; and

(D) demonstrate competency in microcomputer systems operations.

(2) Concepts and skills necessary for microcomputer-based document production, formatting, and proofreading, at least including use of word processing software and automated spellchecking software. The student shall be provided opportunities to:

(A) identify and use the terminology related to word processing;

(B) demonstrate the operational procedures used in document production and page layout; and

(C) employ appropriate steps in producing documents.

(3) Concepts and skills necessary for use of microcomputer-based storage, retrieval, manipulation, and reporting information, at least including use of database management software. The student shall be provided opportunities to:

(A) identify and use the terminology related to information management;

(B) demonstrate the operational procedures and techniques used in information management software;

(C) use microcomputer software to design databases, enter and manipulate information, and produce reports (including graphic display of summary reports); and

(D) conduct keyword database searches using logic operations such as AND, OR, and NOT.

(4) Concepts and skills necessary for use of microcomputer-based computation, analysis, planning, and reporting with numeric data, at least including use of electronic spreadsheets. The student shall be provided opportunities to:

- (A) identify and use the terminology related to electronic manipulation of numeric data;
- (B) demonstrate operational procedures and techniques used with microcomputer software for processing numeric data;
- (C) use microcomputer software for computation, analysis, planning, and reporting (including graphic display) with numeric data; and
- (D) apply electronic spreadsheet software both through use of prepared templates and with student-designed problem solutions.

(5) Concepts and skills related to emerging microcomputer-based information processing tools. The student shall be provided opportunities to:

- (A) understand the concept of exchanging information via telecommunication software, at least including electronic mail, remote bulletin board access, and access of on-line information services;
- (B) understand and use features of integrated software packages to share data among applications;
- (C) understand concepts and identify characteristics and uses associated with tools for desktop publishing and generation of presentation graphics;
- (D) understand concepts related to transporting of textual and nontextual data both locally and remotely, at least including transporting of text and facsimile images electronically, and physical transfer of ultra-high-density storage media; and
- (E) understand concepts related to networked and multi-user configurations.

(6) Concepts associated with the social implications of computers. The student shall be provided opportunities to:

- (A) examine issues concerning responsible use of computer system:
- (B) understand the social ramifications of computer applications related to privacy, values, and reliability of systems; and
- (C) understand the impact of computing on leisure and household management.

Suggested Scope and Sequence

Microcomputer Applications
(Full Year)

SECTION/UNIT	TITLE	WEEKS	HRS.
I.	**Introduction To Microcomputers**		
1	Introduction to the Course	1	5
2	Microcomputer Systems	1	5
3	Basic Microcomputer Operations	1	5
4	Social Implications	1	5
II.	**Word Processing**		
1	Introduction to Word Processing	2	10
2	Document Production Procedures	3	15
III.	**Information Management**		
1	Introduction to Information Management	2	10
2	Information Management Procedures	3	15
IV.	**Electronic Spreadsheets**		
1	Introduction to Spreadsheets	2	10
2	Spreadsheet Procedures	3	15
V.	**Information Processing Tools**		
1	Telecommunication	2	10
2	Networking	2	10
3	Graphic Layout and Design	2	10
4	Desktop Publishing	3	15
VI.	**Closure**		
1	Integration of Applications	1	5
2	Closure for Microcomputer Applications	1	5
	Total Weeks/Hours Allocated	**30**	**150**

Six weeks have been set aside to cover the common essential elements, review, makeup work, and testing.

Suggested Scope and Sequence

Microcomputer Applications
(Half Year)

SECTION/UNIT		TITLE	WEEKS	HRS.
I.		**Introduction To Microcomputers**		
	1	Introduction to the Course	.5	2.5
	2	Microcomputer Systems	.5	2.5
	3	Basic Microcomputer Operations	.5	2.5
	4	Social Implications	.5	2.5
II.		**Word Processing**		
	1	Introduction to Word Processing	1	5
	2	Document Production Procedures	1.5	7.5
III.		**Information Management**		
	1	Introduction to Information Management	1	5
	2	Information Management Procedures	1.5	7.5
IV.		**Electronic Spreadsheets**		
	1	Introduction to Spreadsheets	1	5
	2	Spreadsheet Procedures	1.5	7.5
V.		**Information Processing Tools**		
	1	Telecommunication	1	5
	2	Networking	1	5
	3	Graphic Layout and Design	1	5
	4	Desktop Publishing	1.5	7.5
VI.		**Closure**		
	1	Integration of Applications	.5	2.5
	2	Closure for Microcomputer Applications	.5	2.5
		Total Weeks/Hours Allocated	**15**	**75**

Three weeks have been set aside to cover the common essential elements, review, makeup work, and testing.

SECTION 1
Introduction to Microcomputers

This introduction to *Microcomputer Applications* is an overview of the purpose, objectives, and course content which includes classroom organization, management, and safety.

Essential Elements
75.87(j)(1)(6)

1. **Fundamental concepts and operational skills related to microcomputer systems. The student will be provided opportunities to:**

   A. understand the background and uses for computer systems;

   B. demonstrate competency in touch keyboarding, including technique, speed, and accuracy;

   C. understand the components of computer systems, including hardware, operating environments, and application software; and

   D. demonstrate competency in microcomputer systems operation.

6. **Concepts associated with the social implications of computers. The student shall be provided opportunities to:**

   A. examine issues concerning responsible use of computer system;

   B. understand the social ramifications of computer applications related to privacy, values, and reliability of systems; and

   C. understand the impact of computing on leisure and household management.

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Essential Elements: None
Allocated Time: 3 Hours

Unit Objective: Students will develop an understanding of the purpose, contents, and organization of the course microcomputer applications.

Student Competencies: After completing this unit, the student will be able to:

1. Relate the purpose of microcomputer applications to office education, business, and industry.
2. Recognize the role of the youth organization relative to microcomputer applications.
3. Discuss course objectives, equipment, units, competencies, and evaluation measures.
4. Explain classroom organization, management, and safety.

Focus: Knowing the overview of a course will allow you to become acquainted with the required material. In a business setting, having an overview allows you to see the overall picture and then you can create your goals to achieve the final outcome.

1-1 Introduction

Content Outline

Purpose of course

- Introduction to office education
- Objectives of the course
- Relationship of course to business

Course overview

- Classroom equipment
- Units of instruction
- Competencies
- Evaluation
- Classroom organization and management
- Safety

Teacher Activities

Teacher Preparation

- ☐ Preview unit.
- ☐ Review unit objectives.
- ☐ Make instructional analysis.
- ☐ Assess student learning needs.
- ☐ Decide on lesson domain: cognitive, psychomotor, or affective domain.
- ☐ Select instructional materials based on instructional analysis and student learning needs.
- ☐ Select instructional strategies based on lesson content and student learning needs.
- ☐ Prepare lesson plans from the unit lesson.
- ☐ Prepare additional instructional material.
- ☐ Reserve necessary media and equipment.

Teacher Presentation

- ☐ Present student objectives.
- ☐ Establish rapport with students.
- ☐ Review lesson objectives with students.
- ☐ Relate lesson to prior or future learning.
- ☐ When appropriate, encourage student interaction through questioning, discussions, or some other strategy.
- ☐ Emphasize the value/importance of the unit or activity.
- ☐ Allow time for closure of a lesson.

Reteach Activities

- ☐ Identify area(s) of weakness from results of evaluation.
- ☐ Select unit activities not previously used.
- ☐ Use additional resources and/or create materials based on student learning needs.
- ☐ Use a different teaching strategy in reteaching.
- ☐ Retest.

Specific Teaching Suggestions

This introduction is beneficial to both you and the students. It provides you with the opportunity to present any policies, procedures, expectations, and other relative information which enhance classroom instruction and operations. It also establishes a working environment for the students and presents an overview for the work expected during the class.

Feel free to add other subject matter and instructional materials relative to your teaching assignment. Because the purpose of this section is to introduce the course, student activities and evaluation measures are limited. Some of the teaching activities can be used to develop student activities. Determine a method for assessing student learning.

☐ Design a bulletin board showing the relationship of microcomputer applications to office education. A suggestion might be: "Under the Umbrella of Office Education." List cluster courses and specific courses, highlighting microcomputer applications.

☐ Ask questions at the beginning of the course, such as:

- Why are you taking this course?
- What does the title "Microcomputer Applications" mean to you?
- What do you think the course content covers?
- What is vocational education?
- What is office education?

☐ Show and discuss the transparency "Benefits of Office Education."

☐ Show and discuss the transparency "Learning through Microcomputer Applications."

☐ Ask students to write their perceived likes and dislikes of office occupations. Invite someone who works in an office or related field to respond. Inform the speaker in advance of the nature of the assignment. Secure a person with speaking abilities who projects a positive work image.

☐ Post data on job market projections. Update periodically with projections from different sources.

☐ Invite a former office education student to discuss Business Professionals of America. Be sure to inform the speaker in advance what topics you want covered in the presentation. You may want to include a question-and-answer period.

☐ Review youth conferences with students. Competitive event guidelines could be distributed and discussed.

☐ Develop an orientation presentation on the equipment in the classroom.

☐ Develop, disseminate, and discuss handouts covering classroom policies and procedures. Let students make suggestions for other policies.

☐ Handout the terminology page. Review the list with the students. Ask that they add to the list any terms which they do not understand. Periodically review the lists with the students.

☐ Invite an office worker to speak to the class on the importance of job competency.

☐ Show a film relative to one of the topics: work world, fire precautions, or others.

Business Professionals of America

Official Tagline

"Today's students, tomorrow's business professionals"
Used in all printed materials in conjunction with the name.

Colors

Navy blue, tan and red

Pledge

We are met in a spirit of friendship and goodwill as we prepare for productive lives in business and office careers. We work together to develop professionalism and leadership through Business Professionals of America and pledge our loyalty to our nation.

Emblem

The four points of the Business Professionals of America emblem stand for Ambition, Leadership, Sociability and Poise. The shield itself stands for the honor and dignity of the office profession. The quill and inkwell represent the stability of the office through the ages. The stripes represent direction; the torch signifies the ambition of the members as they strive to achieve goals to bring recognition to themselves and to our national organization.

Goals of Business Professionals of America

Develop student leadership. By participating, planning, serving as officers, conducting meetings, and cooperating with fellow students, coordinators, and teachers, students can develop their leadership qualities.

Improve poise, sociability, attitude, and tact. Members of this organization improve their social graces by taking an active role in office, classroom, and social activities. Many of the students enrolled in these programs have not previously had the opportunity to participate in an organization. Business Professionals of America gives them the opportunity to acquire a sense of belonging for the first time.

Develop vocational competencies in business occupations. Vocational competence means being qualified to enter the world of work with a job skill and a certain amount of confidence in one's ability to perform that job. Students in Business Professionals of America are expected to be able to perform at least one job competently and effectively. Of course, their training is more comprehensive than this.

Promote better understanding at local, state, and national levels. Student participation and fellowship at all levels promotes better programs and provides knowledge of the programs and activities that are being carried out elsewhere.

Promote student ambition for useful purposes. Students learn the value of their own personal ambition and derive satisfaction from helping others.

Learn to plan effectively. Everyone needs to know where he/she is and where he/she is going. Planning is essential to all successful activities.

Develop an enthusiasm for learning and for remaining knowledgeable. In these days, graduating high school seniors can expect to change their major occupation three times. Therefore, enthusiasm for learning is absolutely essential. Students are made aware of our changing society and are taught the necessity of constantly updating their knowledge.

Develop confidence and a spirit of competition. People are competing during their entire lifetimes. Competitive events create excitement and stimulate and facilitate learning and advancement.

Learn to get along with others. Even though an individual may have skill and ability, he/she cannot get a job and keep it if unable to get along with fellow workers.

Develop loyalty through esprit de corps. Everyone needs pride in his or her organization if the organization is to be successful and of benefit to society.

Understand and promote business. Our "quiet" president, Calvin Coolidge, remarked, "The business of America is business." Our American capitalistic economy makes possible one of the highest standards of living in the world. Business Professionals of America students are proud to be part of this great business world and to be able to promote it.

Benefits
of
Office Education

Why developing academic and
vocational skills is important to you.
Skills help you...

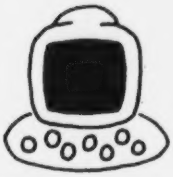
- ☐ Get a job
- ☐ Keep a job
- ☐ Advance your education

Build social and leadership skills while participating in

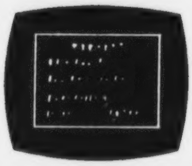
BUSINESS professionals OF AMERICA

- ☐ Attend youth conferences
- ☐ Enter competitive events
- ☐ Run for an office
- ☐ Participate in local chapter activities

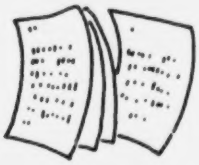
Learning through Microcomputer Applications



Intro to Microcomputers
- Intro to the Course
- Microcomputer Systems
- Microcomputer Operations
- Microcomputer Software
- Social Implications

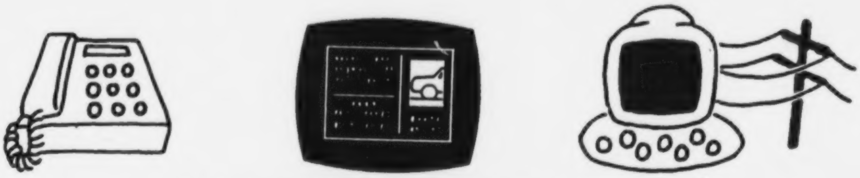


Information Management Systems
- Intro to Information Management
- Information Management Procedures



Word Processing
- Intro to Word Processing
- Document Production

Electronic Spreadsheets
- Intro to Spreadsheets
- Basic Spreadsheet Procedures



Information Processing Tools
- Telecommunications
- Networking
- Graphic Layout and Design
- Desktop Publishing

Essential Elements: 75.87 (j)(1)(A)(C)
Allocated Time: 5/2½ Hours

Unit Objective: Students will gain an understanding of the history and development of the microcomputer, including common terminology, typical business computer systems, and hardware components of a system.

Student Competencies: After completing this unit, the student will be able to:

1. Use commonly accepted terminology related to data processing with microcomputers.
2. Trace the evolution of the personal computer in chronological order.
3. Describe each computer generation including the current generation.
4. Discuss the types of computer systems.
5. Categorize hardware devices by function.
6. Identify and describe the most widely used business systems.

Focus: The personal computer is an important tool used in business, community, and home activities. A knowledge of how microcomputers contribute to productivity and what is available in hardware will enable you to increase your productivity and your value to an employer.

Domains: Activities and competency tests provide learning experiences within the cognitive, psychomotor, or affective domains and are coded on the Activity and Competency Test Matrices.

Basic Skills: Activities and competency tests reinforce the basic skills of reading, writing, and mathematics and are coded on the Activity and Competency Test Matrices.

1-2 Microcomputer Systems

Content Outline

Computer history

Ancient times to 1800
1800 to 1900
1900 to present

Computer generations

First
Second
Third
Fourth
Fifth
Sixth

Types of computer systems

Supercomputers
Mainframes
Minicomputers
Microcomputers
Portables, laptops, and notebooks

Hardware components

Input devices
Processing
Output devices
Input and output devices
Storage

Types of microcomputer systems

MS-DOS systems
Apple systems

Teacher Activities

Teacher Preparation

- ☐ Preview the unit.
- ☐ Review unit objectives.
- ☐ Make instructional analysis.
- ☐ Assess student learning needs.
- ☐ Decide on lesson domains: cognitive, psychomotor, or affective.
- ☐ Select instructional materials based on instructional analysis and student learning needs.
- ☐ Select instructional strategies based on lesson content and student learning needs.
- ☐ Prepare lesson plans from the unit lesson.
- ☐ Prepare additional instructional material.
- ☐ Reserve necessary media and equipment.

Teacher Presentation

- ☐ Present student objectives.
- ☐ Establish rapport with students.
- ☐ Review lesson objectives with students.
- ☐ Relate lesson to prior or future learning.
- ☐ When appropriate, encourage student interaction through questioning, discussions, or some other strategy.
- ☐ Emphasize the value/importance of the unit or activity.
- ☐ Allow time for closure of a lesson.

Reteach Activities

- ☐ Identify area(s) of weakness from results of evaluation.
- ☐ Select unit activities not previously used.
- ☐ Use additional resources or create materials based on student learning needs.
- ☐ Use a different teaching strategy in reteaching.
- ☐ Retest.

Specific Teaching Activities

The microcomputer industry is constantly changing. Instructors must keep abreast of changes so that new developments can be relayed to students. The best source of up-to-date information is popular computer magazines. Many, such as *PC Novice*, *PC Today*, and *PC World*, can be found in bookstores.

☐ Collect magazine articles tracing the development of both the Apple and MS-DOS lines of microcomputers. Have students read and give reports on them.

☐ Obtain a ready-made chart illustrating the hardware elements of a microcomputer and detailing how these elements function together as a system. Check with computer dealers and publishers.

☐ Prepare a class chart or bulletin board illustrating the actions that will damage floppy disks. Discuss disk handling procedures with the class.

☐ Make arrangements for students to visit a computer store or business to see several types of hardware in operation. Most stores will have demonstration models of many different types of hardware including VGA color monitors, laser printers, 386 or 486 computers, Macintosh computers, laser disks, and multimedia available for observation.

☐ Have students prepare a notebook with pictures and data on the newest and best hardware available. The notebooks could include examples of:

- Monitors—including photos of on-screen displays
- Laser printers—including examples of print quality
- 24-pin and 9-pin dot matrix printers—including examples of print quality
- Ink-jet printers—including examples of print quality
- Polaroid film recorders—including examples of slide quality
- Color plotters—including examples of plot quality
- Macintosh, 386 or 486 computers—including charts comparing speed to XT systems
- Portable, laptop, and notebook computer systems
- Various input and output devices.

For each example found, use the form on the next page.

Hardware Research Form

Name:

Function:

Manufacturer: Cost:

Specifications:

Advantages over similar devices:

Disadvantages compared to similar devices:

Activity Matrix

Activities		Domains			Basic Skills		
		Cognitive	Psycho-motor	Affective	Reading	Writing	Math
1		X			X		
2	Project 1	X			X		
	Project 2	X	X		X	X	
3		X				X	
4		X				X	
5	Project 1	X			X	X	
	Project 2	X				X	
6		X				X	

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1-2 Microcomputer Systems

Competency Test Matrix

Parts	Domains			Basic Skills		
	Cognitive	Psycho-motor	Affective	Reading	Writing	Math
I	X			X	X	
II	X			X	X	
III	X			X	X	
IV	X			X	X	
V Project 1	X			X	X	
Project 2	X			X	X	
VI	X				X	

Microcomputer Systems 1-2

Competency Test

PART I: TERMINOLOGY

Match the following descriptions with terms from the list.

A. Calculating
B. Classifying
C. Communicating
D. Data bus
E. Floppy disk
F. Hard disk
G. Hardware
H. Input
I. Interface
J. Kilobyte
K. Microprocessor
L. Modem
M. Mouse
N. Output
O. Processing
P. RAM
Q. Resolution
R. ROM

________ 1. Storage within a computer which holds programs and data during processing.

________ 2. The nervous system of the computer.

________ 3. The physical components of a computer system.

________ 4. The results of processing by a computer system.

________ 5. Permanent unchangeable storage for instructions inside the computer.

________ 6. A storage method of saving data on removable magnetic media.

________ 7. The hardware and connections used to join the computer with peripheral devices such as monitors and printers.

________ 8. A unit for measuring memory, capable of storing 1,024 characters of data.

________ 9. The individual hardware component considered to be the brain of a microcomputer.

________ 10. Performing mathematical operations.

________ 11. Raw data that are entered into the computer.

________ 12. Transferring data from one place to another.

________ 13. The number of dots used to make up an image.

________ 14. Arranging data according to some logical relationship.

________ 15. Takes place when facts are manipulated to produce results.

Competency Test

PART II: COMPUTER HISTORY

Fill in the blank with the appropriate response.

______________________ 1. Invented the punched card used to count 1890 Census.

______________________ 2. Known as the "father of computers."

______________________ 3. Invented a loom that used data processing techniques.

______________________ 4. Device used by Orientals for calculating.

______________________ 5. Equals one character or eight bits.

______________________ 6. First electronic computers to use the stored program concept in the late 1940s.

______________________ 7. The machine invented by Blaise Pascal in 1642 to multiply and divide.

______________________ 8. Considered to be primary storage and used for current computations.

______________________ 9. The first computer financed by IBM.

______________________ 10. The first commercial computer manufactured by Sperry Rand in 1951.

______________________ 11. She was a mathematician and is recognized as the first programmer.

______________________ 12. This entrepreneur bought Radio Shack in 1963 and turned its focus to electronics.

______________________ 13. In 1983, his software program—*Lotus 1-2-3*—put the words *integrated package* on everybody's lips.

______________________ 14. This entrepreneur began Atari in 1972.

____________________ 15. A computation tool made up of rods and bones that was invented in 1614.

____________________ 16. This navy commander is known as the "mother of COBOL."

____________________ 17. He developed *VisiCalc*, which was the first electronic spreadsheet.

____________________ 18. He developed a calculator in 1671 that could add, subtract, multiply, divide, and do square roots.

____________________ 19. He bought Hollerith's company in 1924 and changed the name to IBM.

____________________ 20. They manufactured the first Apple computer in 1976.

PART III: COMPUTER GENERATIONS

Match the appropriate characteristics with each of the following computer generations by placing the correct letter in the space provided.

A. First B. Second C. Third D. Fourth E. Fifth

________ 1. About 900 times faster than first generation computers.

________ 2. From about 1959 to 1964.

________ 3. Very slow, expensive to run and build, and unreliable.

________ 4. When the user gives a command, the program will evaluate the command and if more input is necessary from the user, the computer will ask for it.

________ 5. Used transistors, which were smaller and required less power than vacuum tubes.

________ 6. Introduced in 1971.

________ 7. Instead of large boards, circuits were developed on single chips of silicon.

________ 8. Used the integrated circuit for the first time.

________ 9. Based on the beginning of artificial intelligence operating systems.

________ 10. Heat and maintenance were major problems.

________ 11. Microprocessors were derived from integrated circuits.

________ 12. From about 1952 to 1958.

________ 13. Roughly 100 times smaller than first generation computers.

________ 14. Characterized by the use of vacuum tubes.

________ 15. From 1965 to 1970.

Competency Test

PART IV: COMPUTER SYSTEMS

Fill in the correct type of computer system for each of the following statements.

____________________ 1. Used by banks, large commercial and industrial companies, and government agencies.

____________________ 2. The CRAY is one of the best-known examples.

____________________ 3. Can be conveniently moved because they have no special power or environmental control requirements.

____________________ 4. Most have built-in rechargeable power supplies.

____________________ 5. Do not require a data processing expert to operate them.

____________________ 6. Computers built for very fast operations; usually centralized in a specific area for processing data.

____________________ 7. The smallest computers that have all the features of a microcomputer.

____________________ 8. The name of this computer is derived from its main computing component which is located on one integrated circuit chip.

____________________ 9. Large computers with fast processing speeds that can access billions of characters of data.

____________________ 10. Moderate-sized computers which occupy their own floor space.

PART V: HARDWARE COMPONENTS

Project 1

Fill in the correct hardware components for each of the following statements.

____________________ 1. A pointing device used with the computer screen.

____________________ 2. The classic input device for computers.

____________________ 3. The brains of the computer.

____________________ 4. A disk that contains vast amounts of data but cannot have data written to it.

____________________ 5. Volatile memory.

____________________ 6. Sends and receives digital signals over telephone lines.

____________________ 7. Apple produced the first one that could reproduce anything that could be produced on a computer.

____________________ 8. This type of monitor will show any of 16 colors at once out of a total of 64 colors, at a resolution of 640 by 350 pixels.

____________________ 9. The type of memory that the manufacturer sets at the factory.

____________________ 10. This type of printer uses a computer-controlled pen to draw images and is used exclusively for graphics.

PART V: (Continued)

Project 2

Fill in the correct function (Input, Output, Processing, Storage, or Input/Output) for each of the following components.

________________ 1. ALU

________________ 2. CD-ROM

________________ 3. CGA

________________ 4. CPU

________________ 5. Daisy wheel

________________ 6. Digitizer

________________ 7. Dot matrix

________________ 8. EGA

________________ 9. Floppy disk

________________ 10. Hard disk

________________ 11. Hercules monochrome

________________ 12. Ink jet

________________ 13. Joy stick

________________ 14. Keyboard

________________ 15. Laser printer

________________ 16. Light pen

________________ 17. Modem

________________ 18. Mouse

________________ 19. Optical disk

________________ 20. RAM

________________ 21. ROM

________________ 22. Scanner

________________ 23. Stiffy

________________ 24. VGA

PART VI: BUSINESS SYSTEMS

Describe an early model and a current model from the MS-DOS and Apple systems.

MS-DOS

Early model

Current model

Apple

Early model

Current model

Activity Answers

Activity 1

```
                          R A M
          S                   O
      L   E   C     D         D
      A   C A P A C I T A N C E
      S   O   U     G         M
      E   N         I
  M   R   D         T           R
H A R D C A R D     I       C L O C K
  I   I   R         Z           M   I
  N   S   Y         E     F         L
  M   K             R E S O L U T I O N
  E                       O         B
  M           M E G A B Y T E       Y
  O   P       O           P         T
  R   I   A L U       H A R D W A R E
  Y   X       S           I
    M E G A H E R T Z   I N P U T
      L                   T
```

Activity 2

Project 1

1. H
2. A
3. T
4. P
5. M
6. N
7. B
8. O
9. I
10. Y
11. Q
12. J
13. G
14. F
15. X
16. L
17. V
18. E
19. Z
20. W
21. D
22. U
23. K
24. S
25. R
26. C

Project 2 Evaluated to the satisfaction of the instructor.

Activity 3

Evaluated to the satisfaction of the instructor. The following can be used as a guideline.

First Generation

1. From about 1952 to 1959.

2. Characterized by the use of vacuum tubes.
3. Very slow, expensive to run and build, and unreliable.
4. Heat and maintenance were major problems.
5. Applications were usually payroll processing and record keeping.
6. UNIVAC I is an example.

Second Generation

1. From about 1959 to 1964.
2. Used transistors, which were smaller and required less power than vacuum tubes.
3. English-like commands could now be used for programming rather than using numbers.

Third Generation

1. From 1965 to 1970.
2. Used the integrated circuit for the first time.
3. Instead of large boards, circuits were developed on single chips of silicon.
4. About 900 times faster than first generation computers.

Fourth Generation

1. Introduced in 1971.
2. Microprocessors were derived from integrated circuits.
3. Could now be placed on the office desk.
4. Roughly 100 times smaller than first generation computers.

Fifth Generation

1. Current generation.
2. Based on the beginning of artificial intelligence operating systems.
3. Operating systems use terminology very close to normal English syntax.
4. Artificial intelligence systems are programmed with huge banks of data based on expert opinion.

5. When the user gives a command, the program will evaluate the command, and if more input is necessary from the user, the computer will ask for it.

Activity 4 Evaluated to the satisfaction of the instructor. These guidelines can be used.

Supercomputers

1. Large computers with fast processing speeds that can access billions of characters of data.
2. Sell for about $20 million and require the services of two full-time engineers.
3. Used in applications such as nuclear physics, meteorology, and petroleum engineering.
4. Installation requires a specially prepared subflooring to support the weight of the computer and special plumbing to carry the fluorocarbon fluid needed as coolant.

Mainframes

1. Built to reduce the distance between points for very fast operations.
2. Used for extremely complicated computations.
3. Often requires a specially designed room with air conditioning and a subfloor which covers the cable that connects the processor with the input and output devices.
4. Support large networks of individual terminals and remote job-entry locations.
5. Used by banks, large commercial and industrial companies, and government agencies.
6. Most professional programmers work in a mainframe environment.

Minicomputers

1. Moderate-sized computers which occupy their own floor space.
2. Used when a desktop computer is not powerful enough to do the job.

3. Can be conveniently moved because they have no special power or environmental control requirements.

4. Smaller, slower, and less expensive than mainframes but perform the same tasks as mainframes (on a reduced scale).
5. Cost between $10,000 and $40,000.
6. Store and retrieve data from the same type of input and output devices as mainframes do, but with a smaller storage capacity.

Microcomputers

1. Personal computers or desktop computers largely owned by individuals.
2. Limited in the volume of data they can process.
3. Do not require a data processing expert to operate them.
4. Support peripheral devices.

Portables, laptops, and notebooks

1. Smallest computers now available.
2. Have all the features of microcomputers.
3. Some have hard drives, others use the 3.5 or 5.25 floppy disks, while still others have all three.
4. Footprint is the term that refers to the amount of desk space the computer will require.
5. Screens use a liquid crystal display (LCD) similar to most digital watches.
6. Most of these smaller computers have built-in power supplies that can be recharged.

Activity 5

Project 1

1. Modem
2. Keyboard
3. Abacus
4. Hard disk
5. ROM
6. Microcomputer
7. Printer
8. Plotter
9. ROM/RAM
10. Dot matrix, daisy wheel laser, plotter
11. Mouse

Project 2 Evaluated to the satisfaction of the instructor. The following can be used as a guideline.

Input

1. Keyboards
2. Mice
3. Touch screens
4. Light pens
5. Joy sticks
6. Voice recognition screens
7. Scanners
8. Modems

Processing	Output	Storage
1. ALU	1. Monitors	1. Floppy disks
2. CPU	2. Printers	2. Stiffy disks
	3. Modems	3. Hard disks
		4. CD-ROM

Activity 6 Evaluated to the satisfaction of the instructor. The following can be used as a guideline.

MS-DOS systems

1. 8088 (XT)
   a. A 16-bit processor with an 8-bit data bus.
   b. Capable of addressing 640K of memory.
   c. The oldest and slowest of the MS-DOS machines, but is effective for many applications.
   d. Usually runs at 4.77 to 10 Mhz and is the most common computer for business applications.
2. 8086
   a. A 16-bit processor with an 8/16-bit data bus.
   b. Usually runs at 8 to 12 Mhz and is faster than the 8088.
   c. The PS/2 models 25 and 35 are examples.

3. 80286 (AT)
    a. The business standard for effective data processing on a microcomputer.
    b. A 16-bit processor running at 6 to 10 Mhz.
4. 80386
    a. A faster and better microprocessor than the 80286.
    b. A 32-bit processor running at 16 to 33 Mhz or more with a 32-bit data bus.
    c. Very fast and efficient, even for complicated applications like graphics and CAD.
5. 80486
    a. As fast as the 80386 microprocessor; however, a math coprocessor has been included to speed up calculation.
    b. A 32-bit processor running at 16 to 40 Mhz or more with a 32-bit data bus.
    c. Fast and efficient for complicated computations, graphics, and CAD.
    d. The newest and most expensive microprocessor .

Apple systems

1. The Apple IIc/IIe
    a. Functional microcomputers in the area of elementary education.
    b. Business applications are very limited.
    c. The Apple IIe uses a 16-bit processor, the Motorola 6502, with an 8-bit data bus.
2. The Apple IIgs is a larger and faster computer, but still not widely used in business.
    a. Uses IIc/IIe software.
    b. Uses the Motorola 6502 processor.
    c. Has more memory than the IIc/IIe and has a color monitor.
3. The Macintosh is a very fast and functional microcomputer.
    a. Uses the Motorola 68000 processor, a 16-bit chip.
    b. New chips such as the 68020, 68030, and 68040 are 32 bit and have clock speeds ranging from 16 to 50 Mhz.

c. Comes with a high resolution color monitor, a mouse, and has a graphics interface which makes it very easy to use.

d. Though not as widespread as the MS-DOS machines, the Macintosh is often used for graphics applications.

e. *CrossTalk* allows Macintosh systems to communicate with MS-DOS systems.

Competency Test Answers

Part I

1. P
2. D
3. G
4. N
5. R
6. E
7. I
8. J
9. K
10. A
11. H
12. C
13. Q
14. B
15. O

Part II

1. Hollerith
2. Babbage
3. Jacquard
4. Abacus
5. Byte
6. EDSAC and EDVAC
7. Machine Arithmetique
8. Main memory
9. MARK I
10. UNIVAC I
11. Lovelace
12. Tandy
13. Kapor
14. Bushnell
15. Napier's Bones
16. Grace Hopper
17. Bricklin
18. Leibnitz Wheel
19. Watson
20. Wozniak, Jobs

Part III

1. C
2. B
3. A
4. E
5. B
6. B
7. C
8. C
9. E
10. A
11. B
12. A
13. D
14. A
15. C

Part IV

1. Mainframe
2. Supercomputer
3. Minicomputer
4. Portables
5. Microcompter
6. Mainframe
7. Notebook
8. Microcomputer
9. Supercomputer
10. Minicomputer

Part V

Project 1

1. Mouse
2. Keyboard
3. CPU
4. CD-ROM
5. RAM
6. Modem
7. Postscript laser printer
8. EGA
9. ROM
10. Plotter

Project 2

1. Processing
2. Storage
3. Output
4. Processing
5. Output
6. Input
7. Output
8. Output
9. Storage
10. Storage
11. Output
12. Output
13. Input
14. Input
15. Output
16. Input
17. Input/output
18. Input
19. Storage
20. Storage
21. Storage
22. Input
23. Storage
24. Output

Part VI Evaluated to the satisfaction of the instructor.

Lesson Plan

Essential Elements: 75.87 (j)(1)(B)(D)
Allocated Time: 10/5 Hours

Unit Objective: Students will be able to perform basic microcomputer operations including start up and reset, use common commands, create and manage files on hard and floppy disks, and identify various types of software programs.

Student Competencies: After completing this unit, the student will be able to:

1. Use commonly accepted terms related to data processing operations with microcomputers.
2. Perform a "cold boot" and a "warm boot" using a standard microcomputer operating system.
3. Use standard operating system commands to perform disk management, including preparing a data disk for use, copying and deleting a file, and displaying the disk directory.
4. Discuss types of software, including programming languages, utility packages, and application software.

Focus: Employability increases with a knowledge of basic microcomputer operations. Knowing how to operate a computer increases chances of obtaining a higher-level starting position.

Domains: Activities and competency tests provide learning experiences within the cognitive, psychomotor, and affective domains and are coded on the Activity and Competency Test Matrices.

Basic Skills: Activities and competency tests reinforce the basic skills of reading, writing, and mathematics and are coded on the Activity and Competency Test Matrices.

1-3 Basic Microcomputer Operations

Content Outline

Operating the computer systems

Cold boot (power up)
Warm boot (reset)

Operating systems

Types of operating systems
Using the MS-DOS operating system
Using the Pro-DOS operating system
Using the Macintosh operating system
Environments

Software

Software sources
Types of software

Types of software

Examples of programming languages
Utilities
Applications software

Teacher Activities

Teacher Preparation

- ☐ Preview the unit.
- ☐ Review unit objectives.
- ☐ Make instructional analysis.
- ☐ Assess student learning needs.
- ☐ Decide on lesson domain: cognitive, psychomotor, or affective domain.
- ☐ Select instructional materials based on instructional analysis and student learning needs.
- ☐ Select instructional strategies based on lesson content and student learning needs.
- ☐ Prepare lesson plans from the unit lesson.
- ☐ Prepare additional instructional material.
- ☐ Reserve necessary media and equipment.

Teacher Presentation

- ☐ Present student objectives.
- ☐ Establish rapport with students.
- ☐ Review lesson objectives with students.
- ☐ Relate lesson to prior or future learning.
- ☐ When appropriate, encourage student interaction through questioning, discussions, or some other strategy.
- ☐ Emphasize the value/importance of the unit or activity.
- ☐ Allow time for closure of a lesson.

Reteach Activities

- ☐ Identify area(s) of weakness from results of evaluation.
- ☐ Select unit activities not previously used.
- ☐ Use additional resources and/or create materials based on student learning needs.
- ☐ Use a different teaching strategy in reteaching.
- ☐ Retest.

Specific Teaching Activities

☐ Provide a list of steps for a cold and a warm boot specific to your computer system and your classroom procedures.

☐ Discuss with the students what happens when a warm boot is performed, when this should be done, and what precautions are necessary.

☐ Provide a list of steps to format a disk.

☐ Copy handouts concerning disks for the students.

☐ Filenames and subdirectory names are included in examples. Please make sure students know they are not part of a command.

☐ When introducing the operating system, compare it to the engine of a car; it powers up and runs the machinery. Explain, however, that you do not need to know how the engine was built, but you do need to know that the engine requires unleaded fuel and oil, and the oil should be changed every 2,000 miles. In other words, you do not need to know all the intricate details, but you should know the basic operations and functions.

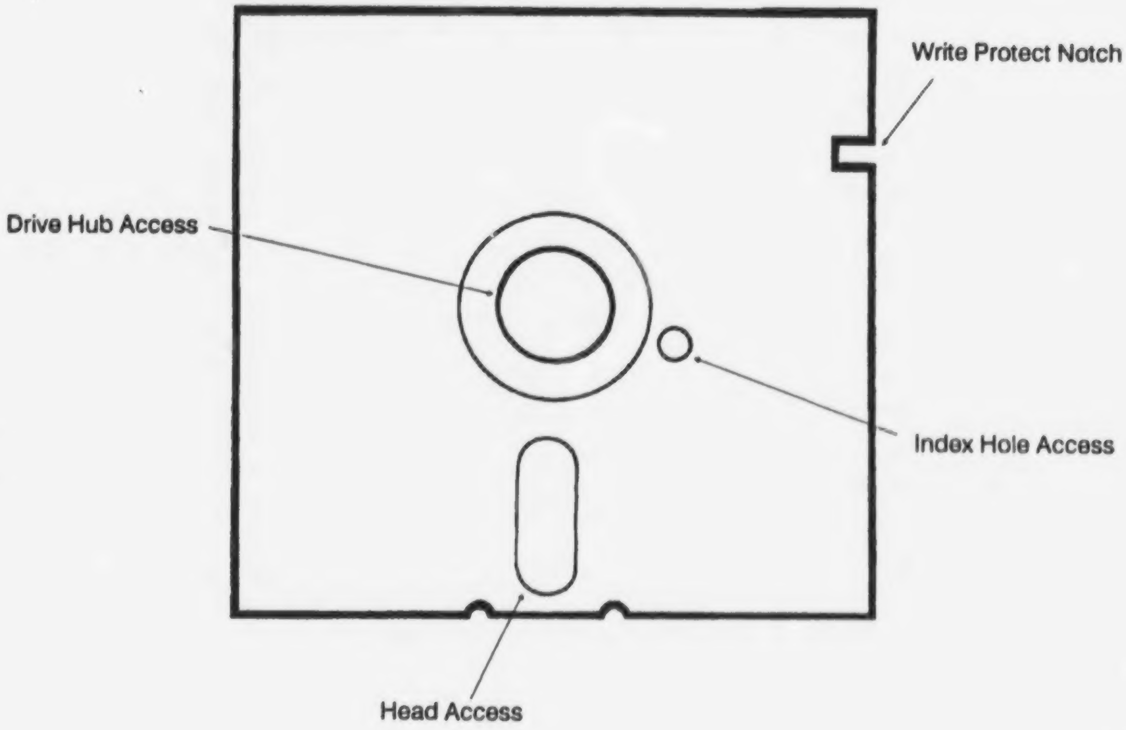
☐ Handouts and supplemental activities on the MS-DOS have been provided. You can use the material as it appears or you may wish to revise it to fit your teaching style. You will need to place filenames used or substitute others on the hard drive.

☐ Refer to Appendix D for the revision of test questions for the *MAP Test Bank*.

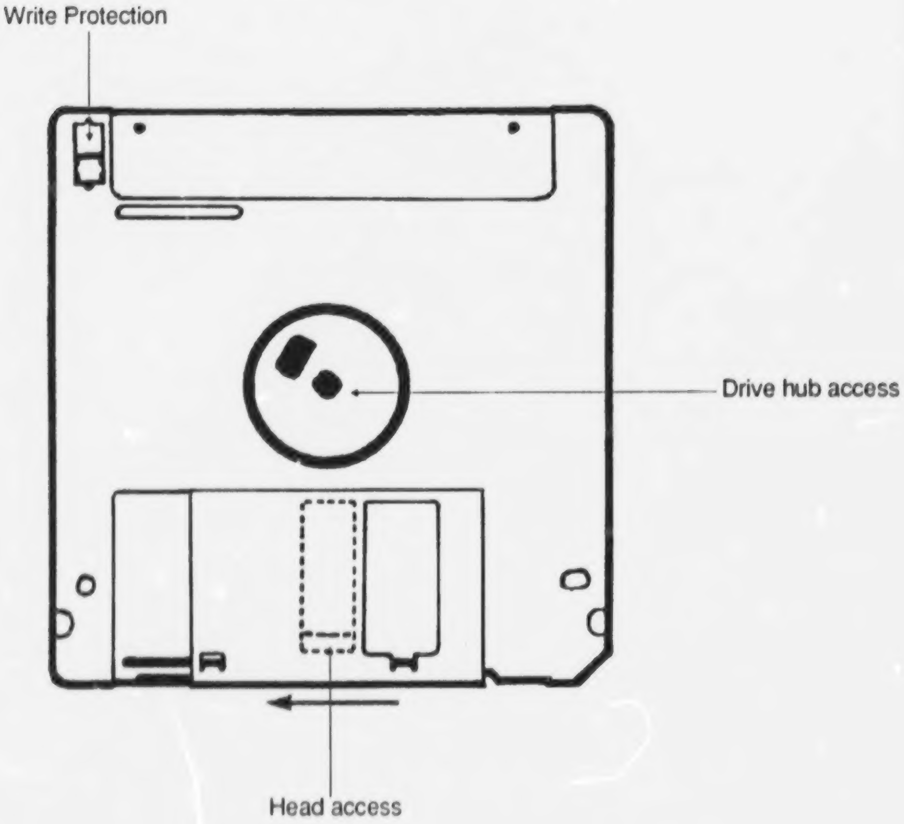
MS-DOS Commands

COMMAND	ACTION	EXAMPLE (includes filenames and subdirectory names)
BACKUP	Takes a file or a group of files from the hard (or another floppy) disk and makes an exact copy to place the information on a floppy disk. A record of directory locations are also preserved.	***BACKUP C: A:***
CD	Changes from one subdirectory to another.	***CD\WP1***
CHKDSK	Gives the number of files and bytes free on a disk.	***C:CHKDSK***
CLS	Erases the screen.	***C:CLS***
COPY	Makes an exact copy of a file and places it on another disk.	***COPY TBEAR.DOC A:***
DATE	Allows the user to enter the correct date into the computer.	***C:DATE***
DEL	Erases a file from a disk	***DEL A:TBEAR.DOC***
DIR	Displays the names of the files stored on a disk.	***C:DIR***
DISKCOPY	Makes an exact copy of one disk onto another disk.	***DISKCOPY A: B:***
EDLIN	A simple line-editor, word processor.	***EDLIN AUTOEXEC.BAT***
FORMAT	Initializes a disk for use.	***FORMAT A:***
MD	Creates a subdirectory on the disk.	***MD\SCHOOL***
PRINT	Prints the contents of a file.	***PRINT A:TBEAR.DOC***
RD	Removes a subdirectory from the disk.	***RD\SCHOOL***
REN	Changes the name of a file on a disk.	***REN TBEAR.DOC POPBEAR.TXT***
RESTORE	Copies files backed up with the BACKUP command, restoring the files to the subdirectory from which they were copied.	***RESTORE A: C:***
TREE	Displays all directories and subdirectories.	***C:TREE***
TYPE	Displays the contents of a file on the screen.	***TYPE AUTOEXEC.BAT***

Floppy Disk


Write Protect Notch
Drive Hub Access
Index Hole Access
Head Access

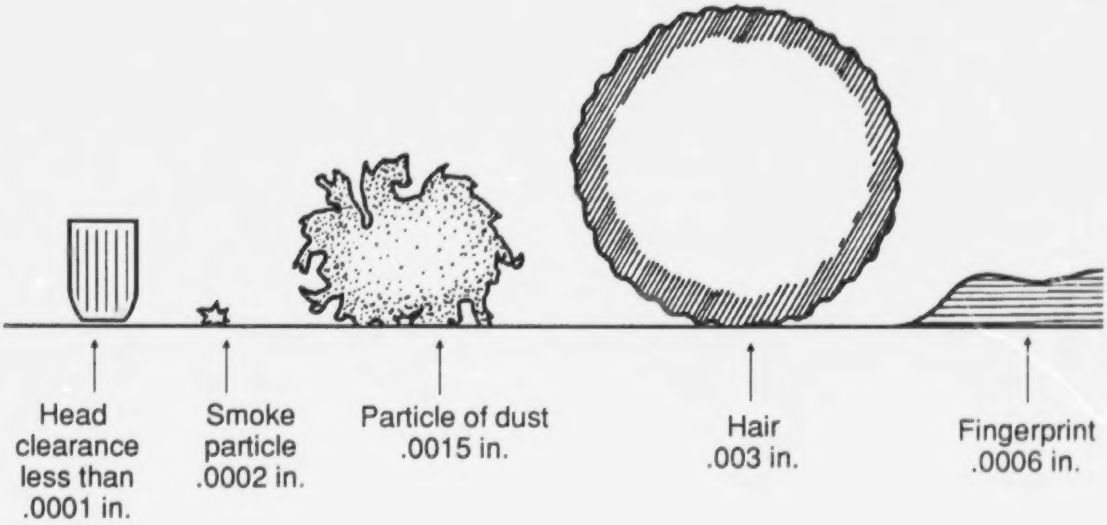
Stiffy Disk


Write Protection
Drive hub access
Head access

Back view

Disk Handling Procedures

Floppy disks can be damaged easily. They are made out of a thin, flexible material that can be easily bent, torn, or stretched. Stiffy disks can be damaged, though not as easily as a floppy disk. Stiffy disks are enclosed in a "stiff" plastic case. Contamination of either type of disk can occur from dust, hair, or smoke.


Head clearance less than .0001 in.
Smoke particle .0002 in.
Particle of dust .0015 in.
Hair .003 in.
Fingerprint .0006 in.

Disk damage may be prevented by:

- Writing on a disk with a felt-tip pen only.
- Storing the disk upright and away from heat or direct sunlight.
- Never touching exposed areas of the disk.
- Never bending or using paper clips on a disk.
- Never placing the disk near a magnet or magnetized object.

Supplemental Activity 1

MS-DOS COMMANDS

Give the appropriate MS-DOS command to accomplish the following requests. Assume the current drive is A, unless the problem specifies differently.

1. List the files on the disk in drive A.

2. List the files on the disk in drive B, one screenful at a time.

3. List the file names on the disk in drive B.

4. List all .BAS files on the disk in drive B, if drive B is the current drive.

5. Copy the file named HOOP.BAS, which is on a disk in drive A, to a disk in drive B.

6. Copy the file name PROG1.CBL, which is on a disk in drive A, to a disk in drive B, giving the new file the name of PROGRAM1.CBL

7. Copy everything in the current directory on drive A to drive B.

8. Delete everything in the current directory on drive A and transfer to drive B.

9. Delete the file CHAPT5.BAK, which is on the disk in drive B.

10. Rename the file SCH1.TXT to SCHOOL1.DOC. The file is on the disk in drive B, the current drive.

11. Display the content of AUTOEXEC.BAT, which is on the disk in drive A.

12. Format the disk in drive B.

13. Check the disk in drive B for errors.

14. Make a subdirectory called WORD on the disk in drive A.

15. Change to the new subdirectory called WORD.

16. Remove the empty subdirectory called WORD, after changing back to the root directory.

Supplemental Activity 2

Assume that MS-DOS is on the hard disk (drive C) and that the data disk is in drive A. What are the commands to accomplish the following?

1. Assume you are at the C prompt. What sequence of commands must you key in to see a directory of drive A on a clear screen.

2. Assume you are in the root directory on drive C. What sequence of commands must you key in to copy a file named FRIEND.DAT from this directory to the subdirectory WORDS on drive A?

3. What are the two common methods for performing a warm boot?

4. Make a duplicate MS-DOS disk.

5. Add all files from drive A to C.

6. Delete all files that begin with a W.

7. Change the extension name of all files with the extension .DOC to .TXT.

8. Format a 3.5 disk (double density) on a high density drive.

9. Format a disk in drive A.

Supplemental Activity 3

Assume MS-DOS is on the hard disk (drive C) and your data disk is in drive B for all applicable questions. List the commands to accomplish the following.

1. Create a subdirectory for word processing, and within that subdirectory, create a subdirectory for storing documents called DOC.

2. From the root directory, change to the DOC subdirectory.

3. Copy a file from drive B to the DOC subdirectory.

4. Make a duplicate copy of a disk.

5. Copy all files from drive B to drive C.

6. Delete all files that start with F.

7. Rename a file DEMO.TXT.

8. Delete all files with the extension .SYS.

9. Clear the screen.

10. Remove the subdirectory DOC.

11. Copy a file from drive B to C, and give it a new name.

12. Return to the root directory from a subdirectory.

13. Display all directories and subdirectories.

14. Change the current date.

15. Reboot the computer.

16. Display the contents of a text file on the screen.

17. Print the contents of a text file.

18. Display the amount of free space on drive C.

19. All files on your disk have your initials for an extension name. You recently changed your last name. Change your initials on all the files.

Matrices

ACTIVITY MATRIX

Activities	Domains			Basic Skills		
	Cognitive	Psycho-motor	Affective	Reading	Writing	Math
1	X			X	X	
2	X	X		X	X	
3 Project 1	X			X	X	
Project 2			X	X	X	
4	X			X	X	

COMPETENCY TEST MATRIX

Parts	Domains			Basic Skills		
	Cognitive	Psycho-motor	Affective	Reading	Writing	Math
I	X			X	X	
II	X				X	
III Project 1	X				X	
Project 2	X				X	
IV Project 1	X			X	X	
Project 2	X				X	

Competency Test

PART I: TERMINOLOGY

Place the appropriate letter in the blank provided.

A. Change directory
B. Cold boot
C. COPY
D. Delete
E. Directory
F. File
G. Format
H. Multitasking
I. List
J. Make directory
K. Operating system
L. Path name
M. Remove directory
N. Rename
O. Root directory
P. Subdirectory
Q. Warm boot
R. Wildcards

__________ 1. Resets the computer. Sometimes done to start programs from a floppy drive.

__________ 2. Changes the name of a file without changing its contents.

__________ 3. Allows more than one program to be run at the same time.

__________ 4. Set of commands and files that contains the information the computer needs to access the disk drives of the system.

__________ 5. Powers up the computer.

__________ 6. File that keeps track of where other files are stored, like an address book.

__________ 7. Command that initializes a disk.

__________ 8. The directory or subdirectory which is currently being accessed by MS-DOS commands.

__________ 9. Characters that can be anything. They are a shortcut for handling several files at once.

__________ 10. Listing of the files located within a directory that has been separated for various purposes.

__________ 11. Collection of information stored on a disk.

__________ 12. Erases screen characters that are highlighted by the cursor.

__________ 13. Command to copy one or more files.

__________ 14. Command to erase a directory that is no longer needed.

1-3 Basic Microcomputer Operations

Competency Test

PART II: BOOTING THE COMPUTER

List the steps to perform a warm boot on your computer. Explain the reasons for using a warm boot.

PART III: OPERATING SYSTEMS AND ENVIRONMENTS

Project 1

Describe at least two types of operating systems.

Project 2

Explain what an environment is and describe one type.

1-3 Basic Microcomputer Operations

Competency Test

PART IV: TYPES OF SOFTWARE

Project 1

For each of the following software programs, decide whether it is:

A. A programming language B. Utility package C. Application software

____ 1. *FORTRAN*

____ 2. *ProComm*

____ 3. *PASCAL*

____ 4. *PC Tools*

____ 5. *Paradox*

____ 6. *COBOL*

____ 7. *Ventura*

____ 8. *AutoCAD*

____ 9. *BASIC*

____ 10. *Norton Utilities*

____ 11. *PFS Professional Write*

____ 12. *Quattro Pro*

____ 13. *Microsoft Works*

____ 14. *Microsoft Word*

____ 15. *C*

Project 2

List each Application software above and tell what the program does. (For example, *Pagemaker*—Page-layout program.)

Supplemental Activity Answers

Supplemental Activity 1

Answers may vary.

1. DIR
2. DIR B:/P
3. DIR B:
4. DIR *.BAS
5. COPY HOOP.BAS B:
6. COPY PROG1.CBL B: REN B:PROG1.CBL PROGRAM1.CBL
7. COPY *.* B:
8. COPY *.* B: DEL*.*A:
9. DEL B:CHAPT5.BAK
10. REN SCH1.TXT SCHOOL1.DOC
11. TYPE AUTOEXEC.BAT
12. FORMAT B:
13. CHKDSK B:
14. MD\WORD
15. CD\WORD
16. CD\DEL *.* A:RD\WORD

Supplemental Activity 2

1. CLS DIR A:
2. A: CD\WORDS COPY C:FRIEND.DAT
3. Pressing the reset button or pressing <Ctrl>, <Alt> and <Delete>
4. CD\DOS COPY *.* A:
5. COPY A:*.*
6. DEL W*.*
7. REN *.DOC *.TXT
8. FOR 720
9. FORMAT A:

Supplemental
Activity 3

1. MD\WP MD\WP\DOC
2. CD\WP CD\WP\DOC
3. COPY B:*.* C:\WP\DOC
4. DISKCOPY A: B:
5. COPY B:*.*
6. DEL F*.*
7. REN TBEAR.DOC DEMO.TXT
8. DEL *.SYS
9. CLS
10. RD\WP\DOC
11. COPY B:TBEAR.DOC REN TBEAR.DOC B1.TXT
12. CD\
13. DIR
14. DATE
15. Press <Ctrl>, <Alt> and <Delete> or reset
16. TYPE TEXT1.TXT
17. PRINT TEXT1.TXT
18. CHKDSK
19. REN *.XXX *.YYY

Activity Answers

Activity 1

```
  C
  O P E R A T I N G S Y S T E M
  L                           U
  D                           L
  B     R E M O V E D I R E C T O R Y
C O P Y                       I
  O     C H A N G E D I R E C T O R Y
  T                     O     A   E
            W A R M B O O T   S   N
                        T     K   A
          W I L D C A R D S   I   M
              I         I     N   E
              S         R     G
          P A T H N A M E   F
                        C   O
        S U B D I R E C T O R Y
                        O   M
                        R   A
M A K E D I R E C T O R Y   T
```

Activity 2

Answers will vary with types of systems used. Evaluated to the satisfaction of the instructor.

Activity 3

Projects 1-2 Evaluated to the satisfaction of the instructor.

Activity 4 Answers may vary. The following can be used as a guideline.

Programming languages

Programming languages translate steps to be performed into detailed instructions the computer understands.

Examples:

1. Machine language
2. Assembly language
3. FORTRAN
4. COBOL
5. BASIC
6. PASCAL
7. C

Utilities

Utilities are programs designed to enhance and improve PC operations.

Examples:

1. *Norton Utilities*
2. *PC Tools*

Application software

Application software is prepackaged software that enhances the operations of microcomputers.

Word Processing Examples:

1. *Microsoft Word*
2. *Microsoft Works*
3. *PFS Professional Write*
4. *WordPerfect*
5. *Wordstar*

Spreadsheet Examples:

1. *Lotus 1-2-3*
2. *Excel*
3. *Quattro Pro*
4. *Multiplan*

Database Examples:

1. *dBase III* and *IV*
2. *Reflex*
3. *Paradox*
4. *R:base*
5. *Q and A*

Graphic Examples:

1. *Corel Draw*
2. *Deluxe Paint 2000*
3. *AutoCAD*
4. *Harvard Graphics*

Comunication Examples:

1. *Microsoft Works*
2. *ProComm*

Integrated Examples:

1. *Microsoft Works*
2. *Apple Works*
3. *Lotus Works*

Page-layout Examples:

1. Xerox Ventura
2. *PageMaker*

Competency Test Answers

Part I

1. R
2. N
3. H
4. K
5. B
6. E
7. G
8. L
9. R
10. P
11. F
12. D
13. C
14. M

Part II Evaluated to the satisfaction of the instructor.

Part III

Project 1 Evaluated to the satisfaction of the instructor. The following can be used as a guideline.

1. Microsoft Disk Operating System (MS-DOS) is the primary operating system used by IBM and compatible computers.
2. The OS/2 operating system was designed by Microsoft in cooperation with IBM for its new family of PS/2 computers. Some consider it the state-of-the-art operating system for managing information on the computer.
3. UNIX was developed by AT&T. This operating system is used primarily by engineers and programmers. Most users will never work with this high-end system.

4. The Apple II family uses both Apple DOS and Pro-DOS (Professional Disk Operating System). Pro-DOS is faster, easier to use, and more powerful than Apple DOS.
5. The Macintosh operating system is written exclusively by Macintosh and is meant to be completely invisible to the user. The system uses a menubar. The user uses a mouse to point and click on the bar to access pop-down menus.

Project 2 Evaluated to the satisfaction of the instructor.

Part IV

Project 1

1. A
2. C
3. A
4. B
5. C
6. A
7. C
8. C
9. A
10. B
11. C
12. C
13. C
14. C
15. A

Project 2

1 *ProComm*—Communications
2. *Paradox*—Database
3. *Ventura*—Page-layout
4. *AutoCAD*—Graphics
5. *PFS Professional Write*—Word processing
6. *Quattro Pro*—Spreadsheets
7. *Microsoft Works*—Integrated
8. *Microsoft Word*—Word processing

Social Implications 1-4

Lesson Plan

Essential Element: 75.87 (j)(6)
Allocated Time: 2.5/5 Hours

Unit Objective: Students will describe issues related to the responsible use of computer systems, discuss social ramifications of computer usage, and identify responsible practices in the use of computers.

Student Competencies: After completing this unit, the student will be able to:

1. Define terminology related to computer crime, computer users, and new computer devices and techniques.
2. Identify major issues and technological developments related to computers and society.
3. Describe ethical and legal issues that have arisen as a result of the computer revolution.
4. Identify privacy issues involved with electronic data storage.
5. Explain reasons for concern about the reliability of computer systems.

Focus: The responsibility that goes with using a computer is like the responsibility of driving an automobile. If the user is irresponsible, careless, or malicious, the effects of his/her decisions and actions can be damaging and far-reaching.

Domains: Activities and competency tests provide learning experiences within the affective, cognitive, and psychomotor domains and are coded on the Activity and Competency Test Matrices.

Basic Skills: Activities and competency tests reinforce the basic skills of reading, writing, and mathematics and are coded on the Activity and Competency Test Matrices.

1-4 Social Implications

Content Outline

Computer use issues

Dependency
Nameless society
Technological developments
Computer virus epidemic

Legal and ethical issues

Data spying
Hackers
Employees or former employees
Piracy
Legal issues

Privacy issues

Credit bureaus
Data banks
Paperless offices
Security methods

Reliability of systems

Hardware
Software
Storage media
Knowledge
Integrity
Accuracy

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Teacher Activities

Teacher Preparation

☐ Preview the unit.
☐ Review unit objectives.
☐ Make instructional analysis.
☐ Assess student learning needs.
☐ Decide on lesson domain: cognitive, psychomotor, or affective domain.
☐ Select instructional materials based on instructional analysis and student learning needs.
☐ Select instructional strategies based on lesson content and student learning needs.
☐ Prepare lesson plans from the unit lesson.
☐ Prepare additional instructional material.
☐ Reserve necessary media and equipment.

Teacher Presentation

☐ Present student objectives.
☐ Establish rapport with students.
☐ Review lesson objectives with students.
☐ Relate lesson to prior or future learning.
☐ When appropriate, encourage student interaction through questioning, discussions, or some other strategy.
☐ Emphasize the value/importance of the unit or activity.
☐ Allow time for closure of a lesson.

Reteach Activities

☐ Identify area(s) of weakness from results of evaluation.
☐ Select unit activities not previously used.
☐ Use additional resources and/or create materials based on student learning needs.
☐ Use a different teaching strategy in reteaching.
☐ Retest.

Specific Teaching Activities

Because information on computer crime and computer ethics has become more available, you may wish to have an open discussion before presenting the unit. This will help you determine how much the students already know about the material.

☐ Obtain a copy of the movie *War Games* or another computer-related movie to show in your classroom. The movie *War Games* shows the dangers of "hacking." Discuss with the students the ramifications of computer hacking.

☐ The laws that are used in Activity 3, Project 2, were difficult to locate. You may wish to have a guest speaker provide an overview of the laws concerning computer crime and related topics. If you are unable to do this, you can obtain a photocopy of the laws or a copy of the *Texas Penal Code* from your local police department. Other laws can be found in history books, publications from the U.S. Government, and periodicals.

☐ Prepare a bulletin board that relates to this unit. Ask the students to bring in articles they find in newspapers or periodicals about responsible use of computers and ramifications of the topic. You might award extra points to students who participate in this activity.

☐ Plan a visit to the school library to search for information about computers and privacy or legal issues.

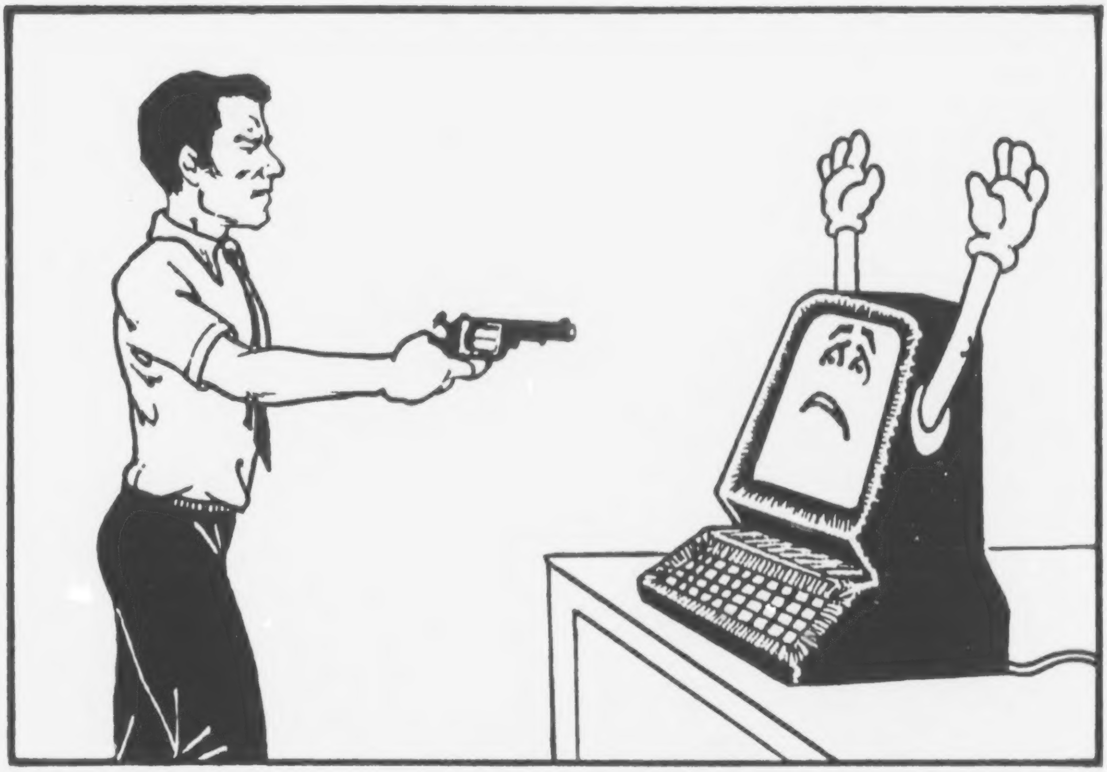
Computer Crime

☐ White-collar crime

☐ Large amounts of money

☐ Theft of technology

☐ Few criminals caught; fewer prosecuted



TM-1

Provisions of the Privacy Act (1974)

Requires justification
for creation of or access to
data banks

Requires that government agencies
and private industry
allow individuals access
to information about themselves

Activity Matrix

Activities		Domains			Basic Skills		
		Cognitive	Psycho-motor	Affective	Reading	Writing	Math
1		X			X	X	
2	Project 1	X				X	
	Project 2	X				X	
	Project 3	X				X	
3	Project 1	X			X	X	
	Project 2	X			X	X	
	Project 3	X				X	
4		X			X	X	
5		X				X	

1-4 Social Implications

Competency Test Matrix

Parts	Domains			Basic Skills		
	Cognitive	Psycho-motor	Affective	Reading	Writing	Math
I	X			X	X	
II Project 1	X			X	X	
Project 2	X			X	X	
III Project 1	X				X	
Project 2	X				X	
IV	X				X	
V	X				X	

Competency Test

PART I: TERMINOLOGY

Fill in the blank with the correct term.

______________________ 1. A program that mimics the decision-making logic of human experts.

______________________ 2. A field of study involving techniques under which computers can formulate responses on the basis of content of accumulated and experience-related information.

______________________ 3. Any illegal act for which knowledge of computer technology is used to commit the offense.

______________________ 4. The unauthorized copying of a computer program.

______________________ 5. The science that deals with robots, their construction, capabilities, and applications.

______________________ 6. A term describing data that has been translated into a secret code for security reasons.

______________________ 7. The final phase of the virus life cycle.

______________________ 8. A form of illegal access to data.

______________________ 9. An information-producing system aimed at a particular decision a manager must make.

______________________ 10. Compact disks for computers, similar to read-only memory.

______________________ 11. Program that watches for typical things viruses do, halts them, and then warns the computer operator.

______________________ 12. A way in which the "spirit" of the law is applied to computer-related activities.

______________________ 13. The process of self-isolation within the current host program and attachment of the isolated segment to a new host.

____________________ 14. A virus that checks for a certain action, such as if an infected program has been executed a given number of times.

____________________ 15. A virus that leaves no external signs of its presence after infection.

____________________ 16. The process a virus uses to identify and distinguish itself from its host system.

____________________ 17. A term that implies that all paper documents have been replaced by electronic media and devices.

____________________ 18. The invasion of a virus into a host system.

____________________ 19. A computer enthusiast who is challenged by the practice of breaking computer security measures.

____________________ 20. A training aid consisting of a response pad and an interconnection box.

Competency Test

PART II: GENERAL ISSUES

Project 1

Answer the following questions.

1. How does computer dependency and the nameless society affect you?

2. How is each of the following used?

   1) Artificial intelligence:

   2) Robotics:

   3) AFIS:

   4) MDT:

   5) CD-ROM:

   6) Hypergraphics:

Project 2

Fill in the blank with the correct term.

____________________ 1. An unauthorized segment of machine-language code that replaces software or data with a copy of itself.

____________________ 2. A virus that checks for a certain action.

____________________ 3. A virus that was created to spread a greeting of world peace.

____________________ 4. A programmer's placement of unauthorized instructions in a computer operating system for future use in gaining unauthorized access to restricted information.

____________________ 5. Replaces the original boot sector with itself; causes loss of data.

____________________ 6. A virus that breaks down the directory section, making it impossible for a disk's contents to be read.

____________________ 7. Infects any application; causes loss of data due to system crashes.

____________________ 8. A segment of code that allows data to be transmitted to the legitimate operator while other data are transferred to an illegal operator.

____________________ 9. Programs that use network connections to spread from system to system.

____________________ 10. Replaces original boot sector with itself; spreads quickly to all bootable disks.

____________________ 11. A virus that checks for a specific date or time.

____________________ 12. Infects any .COM or .EXE program.

____________________ 13. Appears in many different varieties.

____________________ 14. Infects COMMAND.COM file.

PART III: LEGAL AND ETHICAL ISSUES

Project 1

Answer each of the following questions.

1. In your own words, define computer crime and explain why this type of crime is difficult to prosecute.

2. Name three types of computer crime and discuss what you think should be done to stop them.

   1)

   2)

   3)

Project 2

Explain in a short paragraph one of the laws concerned with computers.

PART IV: PRIVACY ISSUES

List in order of importance items which you think could improve privacy for credit bureaus, data banks, and paperless offices.

1-4 Social Implications

Competency Test

PART V: RELIABILITY OF SYSTEMS

Answer the following questions.

1. List three types of computer hardware.

   1)

   2)

   3)

2. What is the best protection against software failure?

3. Name four types of storage media.

   1)

   2)

   3)

   4)

4. How can accuracy of data be improved?

Activity Answers

Activity 1

```
    D          CDROM
    S  E    T   A  D
PAKISTANIBRAIN  T  T
       C    M   A H
COMPUTERCRIME   C A
       Y    B PIRACY
    T  P    O A I K
    R  T L  M P M E
   VACCINE  B E E R
    P  O H    R
  HIDDEN ISRAELI
    O    G O  E
  SCORES H B  S
    R      O  S
E          T  O
T          I  F
HYPERGRAPHICS F
I          S AI
C             C
S   EXPERTSYSTEM
```

Activity 2

Projects 1-2 Evaluated to the satisfaction of the instructor.

Project 3 Answers may vary.

Artificial Intelligence:	A field of study involving techniques under which computers can formulate responses on the basis of content of accumulated and experience-related information. This technology can be used in decision support systems and expert systems.
Robotics:	The science that deals with robots, their construction, capabilities, and applications. This technology can be applied to carriers for inter-office mail or aides for the handicapped.
CD-ROM:	Compact disks for computers. Similar to read-only memory, they cannot be erased or recorded on. They can be used for archival storage.

AFIS: Automated Fingerprint Identification System. Scans a database for criminals' fingerprints. This technology can be used by law enforcement agencies. An expert system can be used with the AFIS to match similar prints when practically invisible prints are found at the scene of a crime.

MDT: Mobile Digital Terminals. Located inside patrol cars, they allow quicker response time to calls than routine voice communication. They provide direct computer access to information, such as names and license plates.

Hypergraphics: Technology used in teaching or training that allows the students, the teacher, and the computer to interact through the use of a response pad and an interconnection box.

Activity 3

Projects 1-3 Evaluated to the satisfaction of the instructor.

Activity 4

Evaluated to the satisfaction of the instructor.

Activity 5

Answers may vary.

1. 1) Microcomputers
   2) Minicomputers
   3) Mainframes
   4) Keyboards
   5) Monitors
   6) Printers

2. Backup copies and taking care of the disks.

3. 1) Magnetic tape
   2) Diskettes
   3) Hard disks

4. Evaluated to the satisfaction of the instructor.

Competency Test Answers

Part I

1. Expert systems
2. Artificial intelligence (AI)
3. Computer crime
4. Piracy
5. Robotics
6. Encryption
7. Activation
8. Data spying
9. Decision support system
10. CD-ROM
11. Vaccine
12. Computer ethics
13. Replication
14. Logic Bomb
15. Hidden virus
16. Isolation
17. Paperless office
18. Infection
19. Hacker
20. Hypergraphics

Part II

Project 1 Evaluated to the satisfaction of the instructor.

Project 2

1. Computer virus
2. Logic Bomb
3. Peace virus
4. Trojan Horse
5. Alameda virus
6. Datacrime
7. Scores virus
8. Trap Door
9. Network worms
10. Pakistani Brain virus
11. Time Bomb
12. Israeli virus
13. nVIR
14. Lehigh virus

Part III

Projects 1-2 Evaluated to the satisfaction of the instructor.

Part IV

Evaluated to the satisfaction of the instructor.

Part V Answers may vary.

1. 1) Monitors
   2) Keyboards
   3) Printers

2. Make backup copies and protect the disks.

3. 1) Magnetic tape
   2) Diskettes
   3) Hard disks
   4) Disk packs

4. Evaluated to the satisfaction of the instructor.

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SECTION 1

Introduction to Microcomputer Applications

Unit 1: Introduction to the Course

Unit Objective: Students will develop an understanding of the purpose, content, and organization of the course microcomputer applications.

Student Competencies: After completing this unit, the student will be able to:

1. Relate the purpose of microcomputer applications to office education, business, and industry.
2. Recognize the role of the youth organization relative to microcomputer applications.
3. Discuss course objectives, equipment, units, competencies, and evaluation measures.
4. Explain classroom organization, management, and safety.

Focus: Knowing the overview of a course will allow you to become acquainted with the required material. In a business setting, having an overview allows you to see the overall picture and then you can create your goals to achieve the final outcome.

1-1 Introduction

Terminology

Business Information Processing	An occupationally specific course that provides hands-on entry-level skills in utilizing computer information technology.
Business Professionals of America	A youth organization designed to provide opportunities for growth and development of business, office, and leadership skills.
Classroom organization and management	Policies and procedures for general classroom operations that enhance the learning environment.
Cluster course	A foundation course that includes concepts and skills needed in office occupations.
Competency	The ability to do something.
Competency checklist	A listing of competencies indicating mastery or nonmastery of each.
Evaluation measures	Methods for evaluating student performance.
Occupational specific course	A course that develops skills needed to perform a specific occupation.
Office education	One of the program areas that provides for vocational education in office-related occupations.
Units of instruction	Identification of specific topics to be taught during a course.

Unit Overview

Purpose of course

Microcomputer applications is one of the cluster courses under the umbrella of office education, which is one of several vocational-technical program areas that combine education and job training. It has been developed using the essential elements required by the State Board of Education.

This course provides fundamental computer concepts and skills needed by all workers. It is composed of instructional activities that will be helpful in getting a job or in providing the foundation needed for advanced computer-related courses. The microcomputer applications course is considered a stepping-stone into the business world.

Job market projections indicate demand for workers with computer skills will continue because:

- ☐ Regardless of the type of business, people will be needed to handle the computer operations of the company.
- ☐ Chances for advancement are good for the worker who has computer-related skills.

The main goal of this course is to provide the student with:

- ☐ Marketable skills.
- ☐ Knowledge.
- ☐ Attitudes that will be useful upon graduation.

In addition to this primary goal, this course will provide experiences that will help the student:

- ☐ Make the transition from high school to the world of work.
- ☐ Develop leadership skills.
- ☐ Make career choices.

Students enrolled in microcomputer applications have an opportunity to participate in youth organization activities at the local, state, and national levels through Business Professionals of America. It is the **only** approved student organization for students enrolled in office education courses.

This component of the course covers:

- ☐ A history of Business Professionals of America.
- ☐ A description of competitive events during which students interact with students from other schools and learn qualities of good sportsmanship.

Leadership skills are developed through:

- ☐ Opportunities to run for local, state, or national office.
- ☐ Being elected an officer by one's peers is an honor and carries the responsibilies of:
    - putting the organization first.
    - speaking in front of groups.
    - planning conferences.

Course overview

- ☐ **Classroom equipment**—the office equipment needed for microcomputer applications has been determined by the essential elements and by the course competencies. The equipment reflects the current skills needed by the beginning worker.

- ☐ **Units**—microcomputer applications includes sixteen units under the following sections:

    - ▲ **Introduction to Microcomputer Applications**—review of purposes, information and activities, classroom organization, evaluation techniques, microcomputer systems, microcomputer operations, microcomputer software, and social implications.

    - ▲ **Word Processing**—introduction to word processing and document production procedures.

    - ▲ **Information Management Systems**—introduction to information management and information management procedures.

    - ▲ **Electronic Spreadsheets**—introduction to spreadsheets and basic spreadsheet procedures.

    - ▲ **Information Processing Tools**—telecommunications, networking, graphic layout and design, and desktop publishing.

    - ▲ **Closure of course**—review of the course, with emphasis on competencies gained through the course.

- ☐ **Competencies**—the ability to do something. The ability to do something includes attitudes, values, skills, and/or knowledge. Most of the competencies included in this course are job-related.
  - Competencies to be developed will be introduced at the beginning of each unit.
  - A competency checklist is included at the end of each unit.

- ☐ **Evaluation**—a variety of methods are used to evaluate performance and knowledge. The methods include:
  - In-class activities.
  - Outside assignments.
  - Skill performance.
  - Tests.

- ☐ **Classroom organization and management**
  - The organization of the classroom has been established to provide optimum experiences for learning. Class size and number of machines are determining factors in classroom organization.
  - For management purposes, it is necessary to establish policies and/or procedures to ensure quality of performance. For example:
    - Care of equipment
    - Use of supplies

- ☐ **Safety**
  - Office workers often feel secure when it comes to safety. The beginning worker does not yet have the experiences to realize the potential danger and should take responsibility for learning more about the office setting and the job itself.
  - Companies give much thought and planning to developing a safe, secure environment for their employees. Many elements are considered to provide facilities and programs that will contribute to the well-being of people who work. One of the areas of concentration is office design, which involves:
    - Attractive and efficient surroundings.
    - Good lighting.
    - Special materials on floors and walls to absorb loud or irritating noises caused by equipment.

▲ Ninety percent of office accidents result from unsafe actions or conditions such as:

- Slipping, tripping, or falling
- Improper use of equipment
- Obstructions
- Fire
- Electricity

▲ The federal government has developed special guidelines to provide safe and healthful work environments. However, employees must do their part. Some of the things employees can do to contribute to office safety are:

- Use good judgment.
- Observe and follow safety procedures.
- Avoid horseplay while on the job.
- Do not use alcoholic beverages or drugs.
- Avoid overloading electrical circuits.
- Keep walkways clear.
- Report frayed or damaged electrical cords.
- Close desk, file, or other drawers before leaving the work area.
- Immediately unplug any machine or electrical appliance that smells like smoke.
- Be careful when sitting in rolling chairs or one that leans back too far.
- Avoid unsafe dress and grooming practices.
- Have proper ventilation.
- Be aware that sharp-pointed objects are hazardous.

▲ In case of an accident—the office worker should know the company policies regarding injuries or accidents. The following steps are usually part of the procedures to follow:

- Turn off power.
- Administer first aid.
- Report all accidents and injuries.
- Take injured person to hospital emergency room.

- Fire safety—some general procedures should be followed relative to fire prevention:
    - Report a fire quickly.
    - Know the types of extinguishers and how to use them.
    - Know location of fire extinguishers and the fire alarm.
    - Keep a clean work area with flammables stored properly.
    - Know how to exit the building in case of a fire.

WARNING: *DO NOT play with firefighting equipment, because it may not work when you need it.*

SECTION 1

Introduction to Microcomputers

Unit 2: Microcomputer Systems

Unit Objective: Students will gain an understanding of the history and development of the microcomputer, including common terminology, typical business computer systems, and hardware components of a system.

Student Competencies: After completing this unit, the student will be able to:

1. Use commonly accepted terminology related to data processing with microcomputers.
2. Trace the evolution of the personal computer in chronological order.
3. Describe each computer generation including the current generation.
4. Discuss the types of computer systems.
5. Categorize hardware devices by function.
6. Identify and describe the most widely used business systems.

Focus: The personal computer is an important tool used in business, community, and home activities. A knowledge of how microcomputers contribute to productivity and what is available in hardware will enable you to increase your productivity, and, as a result, your value to an employer.

Terminology

Arithmetic logic unit (ALU)	Allows comparisons to be made in order to make logical decisions.
Bits	Abbreviation of binary digit. A bit can be 0 or 1.
Bus	The nervous system of the computer that connects the CPU to itself and to the other components of the system.
Byte	Usually an eight-bit configuration where one character can be stored.
Calculating	Performing mathematical operations.
Capacitance	The quantity of electricity that a power source can deliver under specific conditions.
Central processing unit (CPU)	A microchip which handles most of the processing in the computer. It is divided into two parts—the ALU and the control unit. It is thought of as the brains of the computer.
Character	A single letter, number, or special symbol.
Clock	A crystal that vibrates at a high frequency. All operations within the CPU are synchronized to these regular vibrations.
Coaxial cable	A means of transmission that consists of a tube of electrically conducting material that surrounds a central conductor held in place by insulators.
Communicating	Transferring data from one place to another.
Concentric	Circles that have a common center.
Digitizer	A hardware component that converts visual or audio information into digital codes that can be stored and processed by a computer.

Fiber optics	A means of transmission using glass fiber.
Floppy disks	A piece of mylar plastic that has a mylar-coated surface where magnetic images can be recorded. The disk is housed inside a protective jacket and turns inside the jacket.
Fonts	Type sizes and styles available for printing.
Footprint	The amount of desk space a computer occupies.
Hard cards	Devices which allow additional storage to be placed on an expansion port and used as an extra disk drive. They cost a little more than a regular hard disk but do not require an opened disk drive slot in the front of the computer.
Hardware	The physical parts associated with the computer.
Input devices	All hardware components that allow data to be entered into a computer system.
Input	Raw data that are entered into the computer.
Kilobyte (K)	A measurement of a computer's memory; 1024 bytes.
Laser disk	Data are stored by burning tiny holes in the surface with a laser beam—the same technology as compact disk audio systems. Storage potential is great.
Magnetic disk	Data are recorded as magnetized spots on either floppy or hard disks. Information is recorded to and read from the disks by a read/write head located in the disk drive which senses the magnetic spots.
Magnetic tape	Oxide coated tape contained in cassette tapes or tape drives that are used as storage devices.
Mainframe	Computers built for very fast operations; usually centralized in a specific area for processing data.
Megabyte (MB)	One million bytes.
Megahertz (Mhz)	A clock speed measurement for millions of cycles per second.

Microcomputer	Small computer that will sit on a desktop. The name comes from its main computing component which is located on one integrated circuit or chip.
Minicomputer	Moderate sized computer. Used when a microcomputer is not powerful enough to do the job.
Modem	Computer hardware component used to send and receive digital signals over telephone lines.
Mouse	A pointing device for the computer screen.
MS-DOS systems	All IBM compatibles, excluding Apple systems, that use the MS-DOS or OS/2 operating system.
Optical	Relating to vision.
Pixel	A single dot on a computer screen.
Processing	Takes place when facts are manipulated to produce results.
Random access memory	(RAM)—where programs in use are stored. Part of memory that stores data before they are processed, it is erased when the computer is turned off.
Read only memory	(ROM)—contains chips that store permanent instructions for the computer. The user has no access to this memory to erase it.
Register	Memory location within the CPU where data are held for processing.
Resolution	The number of dots used to make up an image.
Scale	The size of an image or character.
Secondary memory	Recorded memory that the processor can access to perform its instructions.
Supercomputer	Large computers with fast processing speeds that can access billions of characters of data.
Syntax	Refers to the exacting way that commands must be keyed in and arranged for the computer.

Tracks	A series of parallel or concentric paths along which data are recorded on magnetic material.
User	The person using the computer.

Computer history

Data processing actually has early roots. Men and women tried to develop tools to aid in calculating answers to problems and keeping track of the results. It was not until after the 19th century, a period known as the Industrial Revolution, that great strides were made. There were many events, discoveries, and inventions that resulted in our present computer age.

☐ Computer-related tools employed or developed between ancient times and 1800 include:

- ▲ **Fingers**—digits (fingers and toes) are considered to be the first calculating device. Early Roman schools taught finger counting.
- ▲ **Abacus**—the first counting machine, made up of rods and beads, used over 3,000 years ago by the Chinese.
- ▲ **Napier's Bones**—a computation tool made up of rods and bones invented by John Napier in 1614.
- ▲ **Machine Arithmetique/Pascaline**—invented in 1642 by Blaise Pascal to multiply and divide. It was a calculator operated by turning dials.
- ▲ **Leibnitz Wheel**—in 1671, Gottfried von Leibnitz, a German, developed a calculator that could add, subtract, multiply, divide, and do square roots. The device did not work very well because of inadequate technology at that time.

☐ Computer-related tools and people who contributed to data processing between 1800 and 1900 include:

- ▲ **Jacquard's Loom**—in 1804, Joseph Jacquard, a Frenchman, developed a loom which could automatically weave patterns on cloth. The automatic looms were operated by paper cards with holes punched in them.
- ▲ **Charles Babbage**—known as the "father of computers." In 1833, Babbage designed the **Analytical Engine** that was never built but was based on concepts very similar to the concepts used in today's computers. If he had been successful, his machine would have been the first computer.
- ▲ **Ada Lovelace**—the daughter of Lord Byron collaborated with Babbage on his research. She was a mathematician and is recognized as the first programmer.

- ▲ **Herman Hollerith**—invented the punched card technique to speed up the processing of the U.S. Census. He invented the first machine capable of processing statistical information from punched cards. The company he organized to manufacture and market his system later became IBM.

☐ Computer-related tools and people who contributed to the evolution of the computer from 1900 to the present include:

- ▲ **T. J. Watson, Sr.**—bought Hollerith's company in 1924 and changed the name to International Business Machines Corporation (IBM) to convey the scope he wanted for the company.

- ▲ **MARK I**—a mechanical device that was the first machine to use a stored program concept. It was developed by Howard Aiken in 1944. The Mark I used punched cards as input and output, and was controlled automatically by instructions punched into paper tape.

- ▲ **Grace Murray Hopper**—this navy commander began her career working with computers while a programmer on the Mark I in 1944. She coined the terms *bug* and *debug*. Grace Hopper also is known as the "mother of COBOL" because of her contributions to the writing of the programming language.

- ▲ **ENIAC**—considered to be the first electronic computer. It was developed by Dr. John W. Mauchly and J. Presper Ecker under a contract from the U.S. Army in 1946. This machine contained several thousand vacuum tubes.

- ▲ **EDSAC and EDVAC**—first electronic computers to use the stored program concept in the late 1940s.

- ▲ **UNIVAC I**—was the first commercial computer. It was manufactured by Sperry Rand in 1951. General Electric and Metropolitan Life Insurance were the first companies to use the Univac I for business purposes. The cost was $1.5 million, and it contained 500 vacuum tubes.

- ▲ **Jack Kilby**—an engineer who invented the integrated circuit/silicon chip/microchip in 1958 while working at Texas Instruments in Dallas, Texas. He determined that all the parts of a circuit—resistors, capacitors, and transistors—could be made of silicon and manufactured in a single block. He shared the patent with Robert Noyce.

- ▲ **Charles Tandy**—bought Radio Shack, a supplier of hobby supplies, in 1963 and turned its focus to electronics. He marketed a low-cost personal computer for electronic hobbyists and then modified some of them for business applications. He also pioneered the personal computer sales with the TRS-80 by using retail outlets, a new marketing technique at that time. His company continues to influence the computer market with its headquarters in Ft. Worth, Texas.

- **H. Ross Perot**—an entrepreneur, created the largest computer service firm in the world, Electronic Data Systems (EDS). He sold EDS to General Motors in 1984.

- **John Kemeny/Thomas Kurtz**—developed the first BASIC program in 1964 to make computers easier to use for everyone. Other educators quickly adapted this programming language for their microcomputer classes at all educational levels.

- **Nolan Bushnell**—In 1972, this entrepreneur began his company, Atari. He was the first person to make a video game that fit into a box that could be put in an arcade. He developed *Pong*, a form of electronic table tennis.

- **Stephen Wozniak and Steve Jobs**—manufactured the first Apple computer in Jobs' parents' garage in 1976.

- **Jack Tramiel**—offered the first low-cost computers to the general public—Commodore PET, VIC-20, and Commodore 64 in 1977.

- **Daniel Bricklin**—developed the first electronic spreadsheet, VisiCalc.

- **Adam Osborne**—introduced the Osborne computer which was designed to fit under an airplane seat in 1981.

- **Mitch Kapor**—developed a software program (1983)—*Lotus 1-2-3*—put the words *integrated package* on everybody's lips.

Computer generations

The development of computers is divided into six generations.

- ☐ **First Generation** (1952 to 1958)
  - Used vacuum tubes.
  - Were very slow, expensive to run and build, and unreliable.
  - Had problems with heat and maintenance.
  - Application programs used for payroll processing and record keeping.

- ☐ **Second Generation** (1959 to 1964)
  - Used transistors, which were smaller and required less power than vacuum tubes.
  - Computers could now be programmed with English-like commands instead of numbers.

☐ **Third Generation** (1965 to 1970)

- ▲ Used the integrated circuit.
- ▲ Circuits were developed on single chips of silicon.
- ▲ Were about 900 times faster than first generation computers.

☐ **Fourth Generation** (1971 to 1987)

- ▲ Microprocessors were derived from integrated circuits.
- ▲ Roughly 100 times smaller than first generation computers and fit easily on an office desk.

☐ **Fifth Generation** (1988 to 1991)

- ▲ Based on the beginning of artificial intelligence operating systems.
- ▲ Used terminology very close to normal English syntax.
- ▲ Can be programmed with huge banks of data based on expert opinion.

☐ **Sixth Generation** (1992) Characteristics are still disagreed upon by experts; therefore, this generation is still obscure.

Types of computer systems

☐ Supercomputers

Supercomputers are large computers with fast processing speeds that can access billions of characters of data. The CRAY is one of the best-known examples of supercomputers. The CYBER is another example of a supercomputer. They are used in applications such as nuclear physics, meteorology, and petroleum engineering.

☐ Mainframes

Mainframes are computers built for very fast operations and are usually located in a centralized area for processing data. They are used for very complicated computations and may require a specially designed room with air conditioning and a subfloor which covers the cable that connects the processor with the input and output devices. The mainframe serves many computer users because they can support large networks of individual terminals and remote job-entry locations. They are used by banks, large commercial and industrial companies, and government agencies. Most professional programmers work in a mainframe environment.

☐ **Minicomputers**

Minicomputers are moderate-sized computers which occupy their own floor space. They can be conveniently moved because they have no special power or environmental control requirements. They are smaller, slower, and less expensive than mainframes but perform the same tasks as mainframes (only on a reduced scale). Minicomputers store and retrieve data from the same type of input and output devices as mainframes do, but they have a smaller storage capacity.

☐ **Microcomputers**

Microcomputers are also known as personal computers or desktop computers. The name "microcomputer" comes from microchip, its main computing component, which is located on one integrated circuit chip. They are limited in the volume of data they can process. They can fit on a desk or table, and do not require a data processing expert to operate them. They support peripheral devices.

☐ **Portable, laptop, and notebook computers**

Portable, laptop, and notebook computers are the smallest computers now available. They have all the features of microcomputers. A variety of disk drive combinations are available. The footprint, or amount of desk space the computer will require, classifies the computer. Most screens use a liquid crystal display (LCD) similar to digital watches; however, other types of displays can be used. Many of these smaller computers have built-in rechargeable power supplies.

Hardware components

Input devices

☐ **Keyboards** are the classic input device for computers. They are inexpensive and effective.

- ▲ Standard XT keyboards have 88 keys. The letters and numbers are laid out in patterns similar to those on a typewriter. The function keys are on the left and the arrow keys are on the right.
- ▲ Enhanced 101 key or AT keyboards have several extra keys, including two extra function keys, and have all function keys in a single row above the regular number keys.

- ▲ Apple II keyboards do not have function keys; however, they do have the open apple and close apple keys which in combination with other keys operate as function keys.
- ▲ Macintosh keyboards do not have function keys, but they have a key similar to that of a control key on a MS-DOS system. Most functions are controlled through the menu bar by using the mouse to point and click.
- ▲ Other keyboard devices capture key information onto magnetic tape or magnetic disk.

☐ **Mice** are pointing devices used with the computer screen. A mouse allows commands to be chosen from on-screen menus, foregoing the necessity of keying the commands every time they are used.

- ▲ **Mechanical mice**—track desktop movement by measuring the movements of a rolling ball housed in the puck which is dragged across a surface. The mechanical mouse will work on any flat desktop surface.
- ▲ **Optical mice**—track movement by measuring changes in the puck's position in an underlying coordinate grid in the mouse pad. An optical mouse will only work when moved on top of the optical grid pad.

☐ **Touch screens** react and respond to contact.

- ▲ **Pressure-sensitive screens**—have a matrix of wires that are built-in on mylar sheets. When the surface of the screen is pressed, two wires make contact which tells the computer the location that was touched on the screen.
- ▲ **Infrared light screens**—have invisible light beams crisscrossing the surface of the screen in a grid pattern. When the screen is touched, the finger breaks the beam of light and signals the computer to respond accordingly.
- ▲ **Capacitance**—the quantity of electricity that a power source can deliver under specific conditions. The screen can sense a change in electrical capacitance when it is touched by the finger.

☐ **Light pens** are pointing devices similar to mice. They have gained in popularity, and are used in applications other than business, in classrooms, or by the handicapped.

☐ **Joy sticks** are very popular input devices for personal computers. They are used primarily with games.

☐ **Voice recognition screens** are slowly becoming more reliable. Most voice recognition systems require the user to train the system.

☐ **Optical scanners** have been available for several years, but only since 1986 has their cost come into a reasonable range for microcomputer users. Scanners are of particular value in desktop publishing.

Capabilities

- ▲ With image scanning, anything printed on paper, including photographs, can be fed into the scanner, read optically, and the results digitized and sent to the computer's memory. The quality of results varies considerably with the type of image. The software which accompanies the scanner has options permitting the user to adjust for brightness and contrast as well as scale.
- ▲ Optical character recognition may include software that interprets patterns to recognize characters that are printed using certain fonts. The advantage of this feature is that once read into memory, the text can be captured as a word processor file and then edited. As more fonts are made available for scanners, the value of this feature increases.

Types of scanners

- ▲ **Flatbed**—the piece of paper to be read is placed on a flat glass surface, similar to a copier. The advantage of this type is that pages from books or magazines can be read without first having to make a copy of them.
- ▲ **Sheet feed**—as the name implies, the material to be read is fed into a slot and passes by the optical reader as it goes through the scanner. It has the advantage of continuous feeding when multiple pages are to be read.
- ▲ **Hand held**—a small optical reader is moved down the page to scan material.

☐ **Digitizers**—digitizing is a general term for the conversion of visual or audio information into digital codes that can be stored and processed by a computer. Cameras designed for video recorders can be used to capture images that are then digitized.

Processing

☐ **Central Processing Unit** (CPU) can be thought of as the brain of the computer. Traditionally, it is one processor doing one job at a time in one computer. The common processors are chips that contain circuits and control what is happening within the computer.

- ▲ MS-DOS machines—Intel 8088, 8086, and 80286—16 bit; and the Intel 80386 and 80486—32 bit.
- ▲ Apple family of computers—Macintosh, Motorola 68000 series—32 bit; Apple IIe, Motorola 6502—16 bit.

Parts of the CPU

- **Clock**—a crystal that vibrates at a high frequency. Clock speed is measured in millions of cycles per second or *Megahertz* (Mhz). Common clock speeds vary from 1.7 to 25 Mhz.

- **Bus**—the nervous system of the computer. Connects the CPU to itself and to the other components of the system, but communication can only take place one message at a time. Bus width is important because it is the number of bits that the bus can carry at once to communicate a message. The following are some common widths and computers in which they are used:
  - 8 bit—XT and Apple IIe.
  - 16 bit—AT and lower PS/2 line.
  - 32 bit—386, 486, and upper PS/2 line.

- **Registers**—memory locations within the CPU where the CPU holds data for processing. The larger the registers, the larger and more powerful the CPU. The common sizes are 8, 16, and 32 bit. Each CPU has several registers, some for special purposes.
  - The instruction register holds location of next instruction to be executed.
  - The decoding unit decodes instructions read from memory.
  - The accumulator is the main register for containing data which is being manipulated.
  - Working registers are additional registers that hold the data and addresses being manipulated.

- **Arithmetic Logic Unit** (ALU) is used for some instructions required for mathematical or logical operations to be carried out on data.

Output devices

- **Monitors**

Resolution means how many dots are used to make up an image. The computer screen is composed of many little dots called pixels that visually blend together to form an image. The more pixels there are on a screen, the clearer that screen's images will be.

Color monitors must use three color pixels: red, green, and blue—the primaries of light. The composite color image is formed by turning on these three primary colors in various combinations and intensities. Using three pixels in place of one decreases the resolution; therefore, to have a comparable level of resolution with the monochrome monitor, the color monitor must have three times as many pixels.

Types of monitors

- ▲ Color Graphics Adapter (CGA) monitors have the lowest resolution and will display four colors at a resolution of 640 by 200 pixels. This is adequate for some applications. The CGA monitors are the least expensive color monitors.
- ▲ Enhanced Graphics Adapter (EGA) monitors are good quality color monitors. They are the next step up in display resolution. The EGA display will show 16 colors at once out of a total of 64 colors, at a resolution of 640 by 350 pixels.
- ▲ Hercules monochrome monitors have similar resolution to the EGA. This monitor is driven by the Hercules compatible graphic adapter and it provides a resolution of 752 by 350 lines in two colors. This display has acceptable resolution for most applications and is by far the most cost-effective display system available, with many companies selling both monitor and display adapters as a kit for under $100.
- ▲ Vector Graphics Array (VGA) monitors have a higher resolution than the EGA. They start at a resolution of 640 by 480 pixels and go up to around 1200 by 1000 pixels. VGA monitors can display 256 colors out of a palette of at least 4000. Some let you choose from up to 16 million colors.
- ▲ Super VGA monitors have been announced that will have truer and clearer color. They have a resolution of 1,024 by 768. They can usually display 256 colors or more at all resolutions. Some of the monitors are on the market, but at this time they are very expensive.

☐ **Printers** are categorized as either impact or nonimpact. An impact printer will put the image onto the paper by some type of printing mechanism striking the paper, ribbon, and character together. Nonimpact printers place the image on paper without striking the paper.

Impact printers

- ▲ Dot matrix printers represent characters by selecting certain dots out of an established matrix which is nine dots high and 12 dots wide. For a higher quality print, the pattern of dots is moved slightly and repeated which results in a more dense pattern of dots. These darker letters are called near-letter quality.
- ▲ 24-pin dot matrix printers' quality approaches that of laser printers and is often called letter-quality. Color option kits are also available for 24-pin printers, making them an excellent candidate for graphics applications.
- ▲ Daisy wheel printers have a wheel with letters and characters on the end of spokes which are rotated and hit with a hammer to strike the paper—much like a typewriter. Daisy wheel printers are an economical way to produce letter-quality

documents and come with a variety of type styles, but have no graphics capability.

Nonimpact printers

- ▲ Laser printers use the same thermal-transfer engine as personal photocopiers. Because of this, their quality is very high. The resolution of the laser printer is 300 dots per inch (dpi). Some of the newer ones are in the 600 dpi range. This is referred to as typeset quality.
- ▲ Postscript laser printers can reproduce anything that can be produced on the computer. The Apple Laser Writer was the first postscript printer.
- ▲ Ink jet printers offer similar resolution to that of the laser printer and are less expensive. They are also lightweight and make good portable printers. Some ink jet printers come with several colors.
- ▲ Plotters use a computer-controlled pen to draw images and are used exclusively for graphics. Pens can be changed to produce almost any color. A plotter can draw any image the computer can produce.

Input and output devices

Modems can be used as either input or output devices by sending and receiving digital signals over telephone lines. Modems can be either internal—located within the computer case, or external—in a separate case of their own. The Hayes compatible modem is the most widely used type. Modems are either direct connect or acoustic coupler and come in several speeds: 300, 1200, 2400, and 9600 baud. Direct connect modems are most commonly used.

Features of modems include auto-answer, auto-disconnect, auto-dial, auto-redial, and time-delay. Methods of transmission include phone lines, coaxial cables, microwave, satellite, and fiber optics.

Storage

☐ **Primary memory** stores the program being executed, data being used, and the operating system of the computer. It serves as a buffer between fast and slow operations and represents screen images.

Primary memory is organized into a sequence of locations. The locations are numbered, and each number is called an address. Each byte or word in an address is called that address's contents.

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Types of primary memory

- ▲ **Read Only Memory** (ROM) cannot be changed. It is set at the factory by the manufacturer. ROM includes such operations as how to start the computer and how to control the screen.

- ▲ **Random Access Memory** (RAM) can be changed. The processor can read and write this memory. RAM must have continuous power to keep its data intact. It is referred to as volatile. RAM is stored in chips grouped in multiples of eight.

- ▲ Memory is measured in K or Kilobytes (1024 bytes). In 1992 the following memory requirements are needed:

  - 640K is considered adequate for basic home computing.
  - 2MB is considered adequate for basic business applications at this time.
  - 3MB is considered adequate for business computing with some graphics at this time.
  - 4MB+ is required for fast computing with graphics.

☐ **Secondary memory** consists of three types of storage. Recorded memory is storage that the processor can access to perform its programming. On-line storage is memory that can be reached electronically. Off-line storage is memory that requires mechanical help.

- ▲ **Floppy disks** are made of mylar plastic that has been coated with a mylar surface that can record magnetic images.

Characteristics

- The disk is housed inside a protective jacket and revolves inside the jacket.
- The disk drive writes on the disk through the read/write window which is a small notch located in the upper right corner of the disk.
- Information on the disk can be protected by placing a foil tab over the read/write window. This is called a write protection tab, and it keeps the read/write head of the drive from recording information on the disk.
- Information is stored in concentric rings called tracks. Each track is organized into several sectors, each separated by a space.
- Some disks come with sectors prerecorded at the factory called hard-sectored disks. Disks without prerecorded sectors are called soft-sectored disks which must be formatted before they can be used.

- Data on disks are organized into files. A particular file may contain either program or data. Each file must have a file name of up to eight characters and a period followed by a file extension of three letters.

Disk sizes

- The 5.25-inch disk is used on both the Apple II and MS-DOS systems. The capacity for an Apple disk is 140K, and the capacity for a MS-DOS disk is 360K or 1.2MB.
- The 3.5-inch disk has a hard plastic case and is sometimes called a "stiffy." It has a capacity of 720K or 1.44MB. The stiffy can be used on MS-DOS and Macintosh systems.

Care

- Physical damages can result from fingerprints, extremes in temperature, bending, dirt, dust, and being written on with a ball point pen.
- Magnetic interference can result from close contact with magnets, televisions, radios, and some telephone receivers.

▲ **Hard disks** were developed by IBM. The early ones were called Winchester disk drives because their storage capacity, two disks at 30MB each, was similar to the caliber of the famous Winchester rifle (30/30). Standard sizes are from 20 to more than 370MB. Access time is the time it takes to retrieve a specific piece of information and is usually measured in nanoseconds or picoseconds. The read/write head flies over the surface of the hard disk at about 1/1,000,000 of an inch. A particle of dust would be 100 times this size.

▲ **Optical disk storage systems** use the same laser disk technology used in the recording of music on compact digital disk audio systems. The storage capacity is great, with each disk holding 300MB or more. The disks are removable, so storage is unlimited. Read only disks are now available which contain such useful information as the *United States Zip Code Directory*, *Compton's Unabridged Dictionary*, and *The Encyclopedia Britannica.*

▲ **Bernoulli boxes** are devices that are located externally to the computer and store data on either 10 or 20MB removable cartridges, allowing virtually unlimited storage.

▲ **Hard cards** are devices which allow additional storage to be placed on an expansion port and used as an extra disk drive. They cost a little more than a regular hard disk but do not require an open disk drive slot in the front of the computer.

☐ **CD-ROM** is a compact disk with data—text, pictures, sound, video—that a computer can read.

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Characteristics

- A CD-ROM drive can be connected to any computer. It is like a huge hard disk that has an extremely fast access time despite the fact it can store more than 550,000,000 bytes of data.
- It is predicted that the CD-ROM drives will become a standard computer peripheral.
- The disks are called ROMs because they can be read, but not written to.
- Computer circuit boards are available for MS-DOS and Macintosh computers for interfacing a compact disk player with the computer.
- Currently, CD-ROM software is limited, but that should change rapidly.
- CD-ROM is primarily a business product, and until the cost lowers, it will not reach the home market.
- One of the primary uses of CD-ROM is the storage of large volumes of data that do not change often. Entire encyclopedias are available on CD-ROMs.
- An entire bookshelf of resources can be stored on a CD-ROM disk. Microsoft Bookshelf is a disk that contains an entire dictionary, *Roget's Thesaurus*, a spelling checker, the *United States Zip Code Directory*, *Bartlett's Quotations*, the *Chicago Book of Style*, many business forms and form letters, and several tutorials. These disks are used in education, libraries, and various businesses that require vast amounts of information. Other CDs available include a library of files from over 900 public domain disks and the *Grolier Encyclopedia*.

Types of microcomputer systems

There are two basic types of microcomputer systems—the MS-DOS systems and the Apple systems. The microcomputer chip made these systems possible, and over the years it has gotten steadily smaller and more powerful.

Around 1978, the first "home" computers began appearing in retail stores. The Commodore Pet, TRS-80 Model I, and Apples were bought primarily by people who already had some knowledge of computers. These early microcomputers were sold with 4K to 16K memory (1,024 characters to 16,352 characters). Until about 1980, inexpensive cassette tapes were used to store programs. Disk drives were introduced around 1979, but were very expensive.

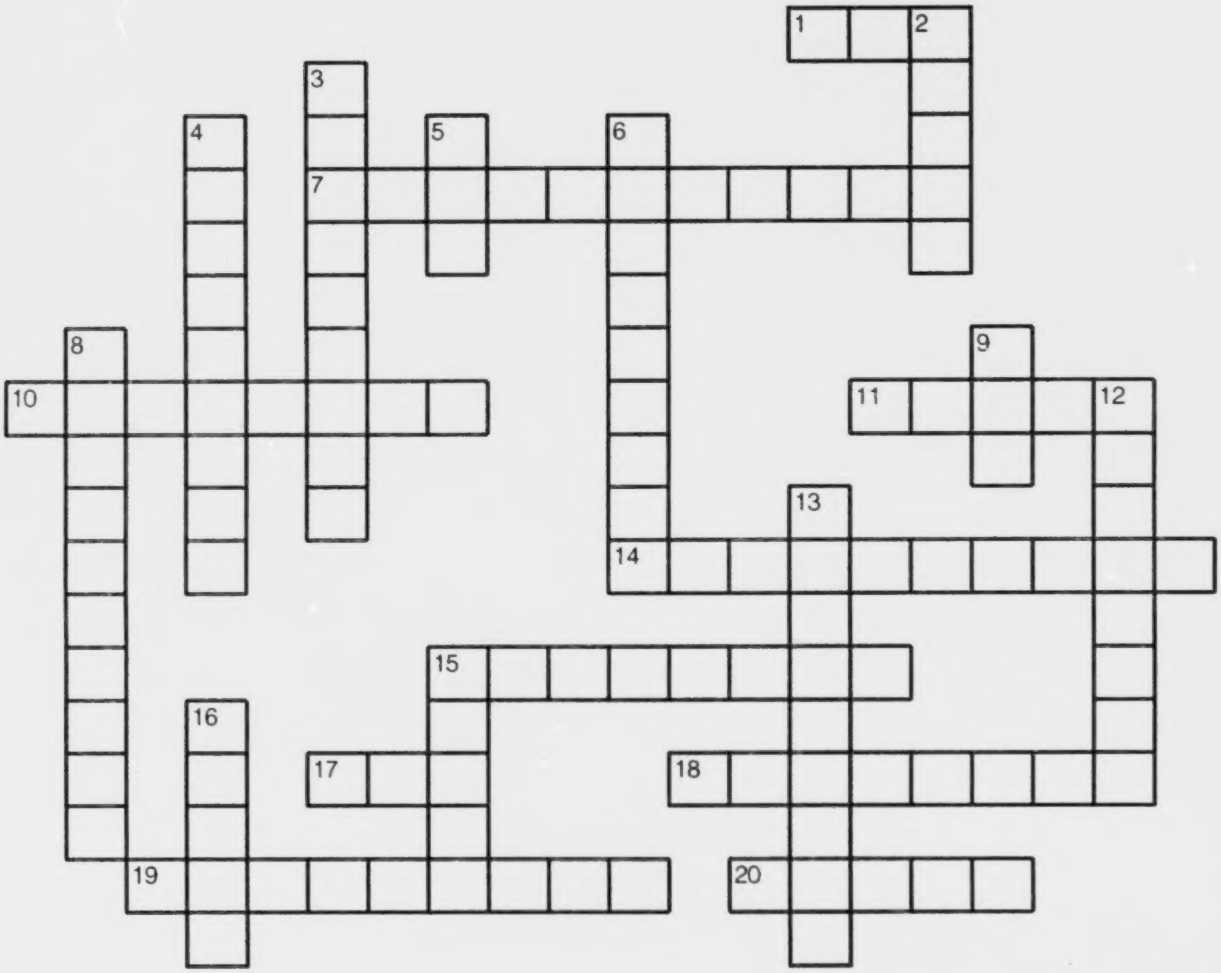
☐ **MS-DOS systems**

- ▲ The 8088 (XT) is a 16-bit processor with an 8-bit data bus. It is capable of addressing 640K of memory and is the oldest and slowest of the MS-DOS machines, but it is effective for many applications. It usually runs at 4.77 to 10 Mhz.
- ▲ The 8086 is a 16-bit processor with a 8/16-bit data bus. It usually runs at 8 to 12 Mhz and is faster than the 8088. The PS/2 models 25 and 35 fall into this group.
- ▲ The 80286 (AT) was the business standard for effective data processing on a microcomputer. It is a 16-bit processor running at 6 to 20 Mhz.
- ▲ The 80386 is a faster microprocessor than the 80286. It is a 32-bit processor running at 16 to 33 Mhz or more with a 32-bit data bus. It is very fast and efficient, even for complicated applications like graphics and CAD.
- ▲ The 80486 has a math coprocessor included to speed up calculations. It is a 32-bit processor running at 16 to 40 Mhz or more with a 32-bit data bus. It is fast and efficient for complicated computations, graphics, and CAD. Since this is the newest microprocessor, most 80486 computers are expensive.

☐ **Apple systems**

- ▲ The Apple IIc/IIe are functional microcomputers commonly used in the area of elementary education. Business applications are very limited. The Apple IIe uses a 16-bit processor, the Motorola 6502, with an 8-bit data bus.
- ▲ The Apple IIgs is a larger and faster computer, but still not widely used in business. It uses IIc/IIe software and the Motorola 6502 processor. It has more memory than the IIc/IIe and also has a color monitor.
- ▲ The Macintosh is a very fast and functional microcomputer. It uses the Motorola 68000 processor, a 16-bit chip. New chips such as the 68020, 68030, and 68040 are 32 bit and have clock speeds ranging from 16 to 50 Mhz. It comes with a high resolution color monitor, mouse and has a graphics interface which makes it very easy to use. Though Macintosh use is not as widespread in business as MS-DOS use, they are often used for graphics applications. *CrossTalk* allows Macintosh systems to communicate with MS-DOS systems.

ACTIVITY 1: TERMINOLOGY CROSSWORD PUZZLE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ACTIVITY 1: CROSSWORD PUZZLE CLUES

ACROSS

1. Part of memory that stores data before they are processed and is erased when the computer is turned off.

7. The quantity of electricity that a power source can deliver under specific conditions.

10. Devices which allow additional storage to be placed on an expansion port and are used as an extra disk drive.

11. A crystal that vibrates at a high frequency.

14. The number of dots used to make up an image.

15. One million bytes.

17. Allows comparisons to be made in order to make logical decisions.

18. The physical parts associated with the computer.

19. A clock speed measurement for millions of cycles per second.

20. Raw data that are entered into the computer.

DOWN

2. A computer hardware component used to send and receive digital signals over telephone lines.

3. Recorded memory that the processor can access to perform instructions.

4. Data are stored by burning tiny holes in the surface with a laser beam.

5. The brains of the computer.

6. A hardware device that converts visual or audio information into digital codes that can be stored and processed by a computer.

8. The primary area of storage; used for current computations.

9. The user has no access to this memory, and it is not lost when the computer is turned off.

12. A measurement of a computer's memory; 1024 bytes.

13. The amount of desk space a computer occupies.

15. A pointing device for the computer screen.

16. A single dot on a computer screen.

ACTIVITY 2: COMPUTER HISTORY

Project 1

Arrange the machines and the people shown below into the correct chronological order.

A. Abacus
B. Analytical Engine
C. Artificial Intelligence
D. Daniel Bricklin
E. Nolan Bushnell
F. EDSAC and EDVAC
G. ENIAC
H. Fingers
I. Hollerith's punched card
J. Grace Murray Hopper
K. Mitch Kapor
L. Jack Kilby
M. Leibnitz Wheel
N. Jacquard's Loom
O. Ada Lovelace
P. Machine Arithmetique
Q. MARK I
R. Microcomputer
S. Microprocessor
T. Napier's Bones
U. Adam Osborne
V. Charles Tandy
W. Jack Tramiel
X. UNIVAC
Y. T. J. Watson, Sr.
Z. Stephen Wozniak

1. ________
2. ________
3. ________
4. ________
5. ________
6. ________
7. ________
8. ________
9. ________
10. ________
11. ________
12. ________
13. ________
14. ________
15. ________
16. ________
17. ________
18. ________
19. ________
20. ________
21. ________
22. ________
23. ________
24. ________
25. ________
26. ________

Project 2

Using the information in Project 1, create a time line that illustrates developments in computer technology. You may wish to be creative and use drawings or pictures.

ACTIVITY 3: COMPUTER GENERATIONS

List two characteristics for each of the following computer generations.

First

1. ____________________
2. ____________________

Second

1. ____________________
2. ____________________

Third

1. ____________________
2. ____________________

Fourth

1. ____________________
2. ____________________

Fifth

1. ____________________
2. ____________________

1-2 Microcomputer Systems

Activities

ACTIVITY 4: COMPUTER SYSTEMS

Discuss each of the following types of computer systems.

Supercomputers:

Mainframes:

Minicomputers:

Microcomputers:

Portables, laptops, and notebooks:

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ACTIVITY 5: HARDWARE COMPONENTS

Project 1

Fill in the name of the appropriate hardware component.

____________________ 1. The device that allows communication between computers.

____________________ 2. A component that is used for input of letters, numbers, and symbols.

____________________ 3. A very early calculating device that is still used today.

____________________ 4. Stores information faster and with more reliability than the floppy disk.

____________________ 5. A part of the computer's memory that cannot be changed.

____________________ 6. Sometimes this computer is called a personal or home computer.

____________________ 7. Used to produce a hard copy of data.

____________________ 8. Uses pins to produce graphics and charts.

____________________ 9. The _______ and ______ are the two parts of computer memory.

____

____________________ 10. List four types of printers.

____

____

____

____________________ 11. A device used to easily move around the screen.

Project 2

Give examples of devices for each of the following computer functions.

Input:

Processing:

Output:

Storage:

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ACTIVITY 6: BUSINESS SYSTEMS

Describe two computers from the MS-DOS family and two from the Apple family.

MS-DOS:

1. ______________________________

____

____

2. ______________________________

____

____

Apple:

1. ______________________________

____

____

2. ______________________________

____

____

SECTION 1

Introduction to Microcomputers

Unit 3: Basic Microcomputer Operations

Unit Objective: Students will be able to perform basic microcomputer operations including start up and reset, use common commands, create and manage files on hard and floppy disks, and identify various types of software programs.

Student Competencies: After completing this unit, the student will be able to:

1. Use commonly accepted terms related to data processing operations with microcomputers.
2. Perform a "cold boot" and a "warm boot" using a standard microcomputer operating system.
3. Use standard operating system commands to perform disk management, including preparing a data disk for use, copying and deleting a file, and displaying the disk directory.
4. Discuss types of software, including programming languages, utility packages, and application software.

Focus: Employability increases with a knowledge of basic microcomputer operations. Knowing how to operate a computer increases chances of obtaining a higher-level starting position.

Terminology

Change directory (CD)	Command used to change the current path to another directory or subdirectory.
Cold boot	Powers up the computer.
COPY	Command used to copy one or more files.
Delete	Key used to delete screen characters that are highlighted by the cursor.
Delete (DEL)	Command that erases one or more files from the specified disk drive.
Directory	File that keeps track of where other files are stored, like an address book.
Directory (DIR)	Command used to display a listing of files on a disk.
Editing	Making changes in existing data.
File	Collection of information stored on a disk.
Format	Command that initializes a disk according to the specific format of the computer being used. It prepares the disk by dividing the volume into blocks.
Make directory (MD)	Command used to establish a new, empty directory or subdirectory.
Multitasking	Allows more than one program to run at the same time.
Operating system	A set of commands and files that contains the information the computer needs to access the disk drives of the system.

Path name	The path the computer takes to find a file. Refers to the particular directory or subdirectory which is currently being accessed by MS-DOS commands.
Pro-DOS	The best and most current operating system for Apple IIc, IIe, and IIgs microcomputers.
Remove directory (RD)	Command used to erase a directory that is no longer needed.
Rename	Changes the name of a file without changing its contents.
Root directory	The most basic directory. It branches out into directories and subdirectories.
Subdirectory	Listing of the files located within a directory that has been divided for various purposes.
Warm boot	Resetting the computer. Sometimes done to start programs from a floppy drive.
Wildcards	Similar to wildcards used in card games; characters that can be anything. They are a shortcut for handling several files at once.

Operating the computer systems

- ☐ Performing a cold boot (power up) on any system means turning on the system. Most users plug power cords from all components of the computer system into a power strip with a built-in surge suppressor. This way the system can be turned on with a single switch, and all components are protected from power surges.

- ☐ A warm boot (reset) is done while the computer is on.

  - ▲ Use a warm boot to escape from a program if the computer has locked up, to get out of program, or to start up programs from a floppy drive.

    NOTE: *Any information not previously saved will be lost during a warm boot.*

  - ▲ Procedures to activate a warm boot

    - On MS-DOS computers, press the reset button on the front of the computer housing to activate a warm boot. If there is no reset button, press <Ctrl>, <Alt>, and <Delete> simultaneously.
    - On Apple systems, press <CONTROL>, <OPEN>, <APPLE>, and <RESET> simultaneously. If the combination keys do not work for your particular computer, refer to the operating system and computer manual.
    - Macintosh systems have no warm boot feature.

Operating systems

An operating system is like any other software program. It contains a set of instructions that tells the computer where and how to communicate with disk drives, monitors, keyboards, and other peripherals; allows several application programs to run; and does file management.

- ☐ **Types of operating systems**

  - ▲ Microsoft Disk Operating System (MS-DOS) is the primary operating system used by IBM and compatible computers. Several versions have evolved over the years.

- The OS/2 operating system was designed by Microsoft in cooperation with IBM for its new family of PS/2 computers. Some consider it the state-of-the-art operating system for managing information on the computer.
- UNIX was developed by AT&T. This operating system is used primarily by engineers and programmers. Most computer users will never work with this high-end system.
- The Apple II family uses both Apple DOS and Pro-DOS (Professional Disk Operating System). Pro-DOS is faster, easier to use, and more powerful than Apple DOS.
- The Macintosh operating system is written exclusively by Macintosh, and is meant to be completely invisible to the user. The system uses a menubar. The user utilizes a mouse to point and click on the bar to access pop-down menus.

☐ Using the MS-DOS operating system

Hard disk management

- Accessing the hard drive root directory means looking at the files, additional directories, and programs loaded on the hard drive.
  - At the C prompt (C>), key in ***DIR***.
  - Press ***ENTER***.
  - The root directory contents will appear on the monitor.
- Rules for naming directories and files
  - Limited to eight characters with a three character extension.
  - First character must be a letter.
  - Any other characters can be letters, numbers, or certain punctuation marks.
  - No spaces can be used.
- Changing directories is performed after a specific directory has been located in the root directory. To look at files located in the specified directory, change from the root directory to the specific directory.
  - Key in ***CD\(directory name).***
  - Press ***ENTER***.
  - To return to the root directory, key in ***CD*** and then press ***ENTER***.

▲ Creating a directory is necessary when loading a new program on the hard drive or creating a specific group of files.

- To make a directory, at the C>, key in **MD\(directory name)**.
- Press ***ENTER***.
- After creating a directory, change to that directory.
- After changing to that specific directory, files can be copied into it.

▲ Copying files

- To copy one or two files, key in ***COPY HELPME.DOC*** at the C>.
- Press ***ENTER***.
- If all files or most of the files will be copied, use wildcards after keying in the ***COPY*** command. (At the C> key in ***COPY *.* A:)***
- ▲ Using wildcards "?" and "*"

"?"—takes the place of only one character.

- LETTER??.D?? accesses all files in which the first six letters of the file name are LETTER and the first letter of the extension is D.
- ???????T.TXT accesses all file names that end in a T and have the extension of .TXT.

"*"—takes the place of any number of characters.

- R*.EXE accesses all .EXE files beginning with the letter R.
- B*T.* would access all files beginning with B and ending with T, regardless of file extension.
- *.* will access all files on that drive or path name.

▲ Deleting files

- Deleting files can be done in the same manner as copying files.
- For example at the C>, key in ***DEL TBEAR.TXT***.
- Press ***ENTER***.

NOTE: *When using wildcards to delete files, be sure to double check which files are being deleted so that important files, such as the operating system or the entire hard drive, are not deleted.*

▲ Removing directories

- Removing directories can be done in the same manner as making directories.
- Be sure that all files in the directory have been copied or deleted BEFORE trying to remove the directory. The directory **cannot** be removed if even one file exists.
- To remove a directory, the user cannot be in the directory being removed.
- At the C>, key in ***RD\(directory name)***.
- Press ***ENTER***. The directory will be removed.

Floppy or stiffy disk management

▲ A floppy or stiffy disk must be formatted before work begins. Formatting means that the disk is prepared by the operating system to accept data.

- At the A, B, or C prompt (A> or B>), key in ***FORMAT A:*** or ***FORMAT B:***.
- Press ***ENTER***.
- The system will then prompt the user to place the disk in the appropriate drive and press ***ENTER*** to begin formatting the disk.

▲ Accessing the floppy drive root directory means looking at the files, additional directories, and programs loaded on the floppy drive.

- At the A or B prompt, key in ***DIR***.
- Press ***ENTER***.
- The root directory contents will appear on the monitor.

▲ Once a specific directory has been located, go into that directory to look at the files. First, change from the root directory to the specific directory.

- At the A or B prompt, key in ***CD\(directory name)***.
- Press ***ENTER***.
- When you want to return to the root directory, key in ***CD*** and press ***ENTER***.

▲ Rules for naming directories and files are the same as naming them on the hard drive.

- ▲ Create a directory when a specific group of files needs to be separated from another group of files on the same disk.
    - At the A> or B>, key in ***MD\(directory name)***.
    - Press ***ENTER***.
    - After creating a directory, change to that directory.
    - After changing to that specific directory, files can be copied into it.
- ▲ Using wildcards "?" and "*" on a floppy disk is done in the same manner as on the hard disk.
- ▲ Copying files
    - To copy one or two files, key in ***COPY HELPME.DOC*** at the A> or B>.
    - Press ***ENTER***.
    - If all files or most of the files will be copied, use wildcards after keying in the ***COPY*** command at the appropriate prompt.
- ▲ Deleting files
    - Deleting files is done in the same manner as copying files.
    - For example at the A> or B>, key in ***DEL TBEAR.TXT***.
    - Press ***ENTER***.

NOTE: *When using wildcards to delete files, be sure to double check which files are being deleted so that important files, such as the operating system, are not deleted.*

☐ Using the Pro-DOS operating system

Hard disk management

- ▲ Although most Apple systems do not have hard drives, Pro-DOS can access the hard drive by using the PRO-FILE command. Most Apples run with one or two floppy drives.

Floppy disk management

- ▲ Most commands used in Pro-DOS are first selected from the Pro-DOS Filer, the utilities for the operating system. All other commands are generally located under volume or file commands.

Volume commands—work on the whole disk. A volume is a collection of files.

- Volume names must begin with a slash followed by a letter; be made up of letters, numbers, or periods; have no spaces or punctuation other than periods; and be no longer than 15 characters.
- *TUTOR*—explains what the volume commands do and how to type in the entries.
- *FORMAT*—prepares the volume for use by dividing it into blocks.
- *COPY*—makes an exact duplicate of a volume in another location.
- *LIST*—shows which disk drives/slots contain Pro-DOS formatted disks, and what drive/slot volume name corresponds to each.
- *RENAME*—assigns another name to a volume without changing its contents.
- *COMPARE*—shows the difference between two volumes to determine if they are exact copies of each other.

File commands—are used on individual files.

- *LIST*—lists all files in a particular directory.
- *COPY*—makes an exact copy of a file.
- *DELETE*—erases an unwanted file.
- *COMPARE*—compares two files to see if they are identical.
- *ALTER WRITE PROTECTION*—allows files to be locked or unlocked.
- *RENAME*—changes the name of a file without changing its contents.
- *MAKE DIRECTORY*—creates a subdirectory.

Rules for naming Pro-DOS files

- Can be no more than 15 characters.
- First character must be a letter.
- Any other characters can be letters, numbers, or periods.
- No spaces or punctuation marks (other than periods) may be used.

Wildcards for Pro-DOS

- "="—when placed between two characters, this wildcard will take the place of any number of characters between the two.
- "?"—works exactly like the "=" wildcard, but the user can evaluate each response according to the command executed at the time.

☐ Using the Macintosh operating system

Hard disk management

- ▲ Accessing files and folders located on the hard drive is accomplished by clicking on the hard drive icon. A list will appear in a dialog box.
- ▲ Once a specific folder has been located, click on the folder. Another dialog box will appear.
- ▲ Rules for naming folders and files
    - Limited to 15 characters.
    - First character must be a letter.
    - Any other characters can be letters, numbers, or periods.
    - No spaces or punctuation marks (other than periods) may be used.
- ▲ Create a folder to load programs or files on the hard drive. Click on ***SPECIAL*** located on the menubar and then choose ***NEW FOLDER***. Name the new folder by clicking on the folder and when the I Bar appears, key in the folder name.
- ▲ Copy files by clicking on and then dragging the file to another portion of the hard drive or into the new folder.
- ▲ Delete files and remove folders by clicking and dragging them to the trash can at the bottom, right-hand portion of the screen.
- ▲ When a Macintosh does not have a picture to represent a function, it lists it in a menu.

Stiffy disk management

- ▲ To use a file on a stiffy disk, place the disk in the disk drive. If the disk has not been initialized, the system will prompt the user. The user can then initialize (format) the disk. After this process is complete, the user can then name the disk when the I Bar appears.
- ▲ Stiffy disks are managed in the same manner as using the hard drive except the user must double click on the floppy disk icon.

☐ Environments—manage the operating systems which are hidden beneath them.

- ▲ Windows for MS-DOS systems is a graphical user interface or GUI (pronounced "gooey"), which means it uses pictures (icons) to help the user communicate with the computer. The mouse is used to click on icons to access programs and files easily.

  Characteristics

  - DOS is required to run *Windows* but it remains hidden beneath it. *Windows* helps manage DOS.
  - Multitasking—allows running more than one program at the same time
  - Data can be integrated among the *Window* applications.
  - Dynamic Data Exchange (DDE) allows "Hot links" to be created so that all the same data can be changed across-the-board after changing the data in only one place.

- ▲ *Hypercard* environment is available exclusively for the Macintosh operating system. It allows the organization of information in stacks of electronic index cards which are accessed by clicking on the mouse buttons and the buttons on the cards. *Hypercard* includes *Hypertalk*.

  Hypertalk

  - Allows the user to program, design, and customize his/her own application software.
  - Allows the user to create applications only limited by the user's imagination.
  - Includes the use of pull-down menus, dialog boxes, scrolling text fields, buttons, and icons.

Software

Early software and application programs were only available when sold with the computer. Individuals wrote and exchanged programs on tape and disk until developers began forming software companies and selling software by mail and through retail stores. As magazines dedicated to one particular computer, or to computers in general, came into existence, they provided a place to advertise software. This stimulated the growth of software companies. The challenge now is not to find software, but to choose from among the thousands of programs available. Quality of software varies, as does price.

☐ Software sources

- ▲ Public domain or shareware programs, written by non-professionals, are non-copyrighted and free or inexpensive. They are available through organizations, bulletin boards, or individuals.
- ▲ Computer manufacturers market languages and some applications software under their own labels. This is done less than it was a few years ago due to the plentiful supply from other commercial sources.
- ▲ Software publishers are now the major source of programs. There are hundreds of publishers, but the field is dominated by the larger ones, some of which are owned by major corporations. Most advertise nationally and produce versions of their programs for all the popular computers.
- ▲ Magazines are the major vehicle for software advertising, descriptions, and evaluations. They are sometimes a source of original programs. Some magazines regularly publish listings of games or handy utility programs. Others make software available on disk. These copyrighted programs are free with the cost of the magazine.
- ▲ Retail computer stores, bookstores, department stores, discount houses and software specialty stores all sell software.

☐ Types of Software

- ▲ Programming languages translate steps to be performed into detailed instructions the computer understands.

  Examples

  - **Machine language,** unique to each computer, is written in binary code, and all other languages must be converted to machine language before the computer can understand.
  - **Assembly language** was developed in the early 1950s to make using machine language easier. Assembly language replaced the binary code with symbolic names that were easier to remember.
  - **FORTRAN (FORmula TRANslator),** the oldest high-level language, was developed primarily for engineering, mathematical, and scientific applications.
  - **COBOL (COmmon Business-Oriented Language)** was developed in 1960 for business applications. COBOL was designed to be easy to understand, maintain, and modify.
  - **BASIC (Beginner's All-purpose Symbolic Instruction code)** was developed at Dartmouth College to help students learn to program. This high-level language is simple, flexible, and can be learned by people with no programming experience.

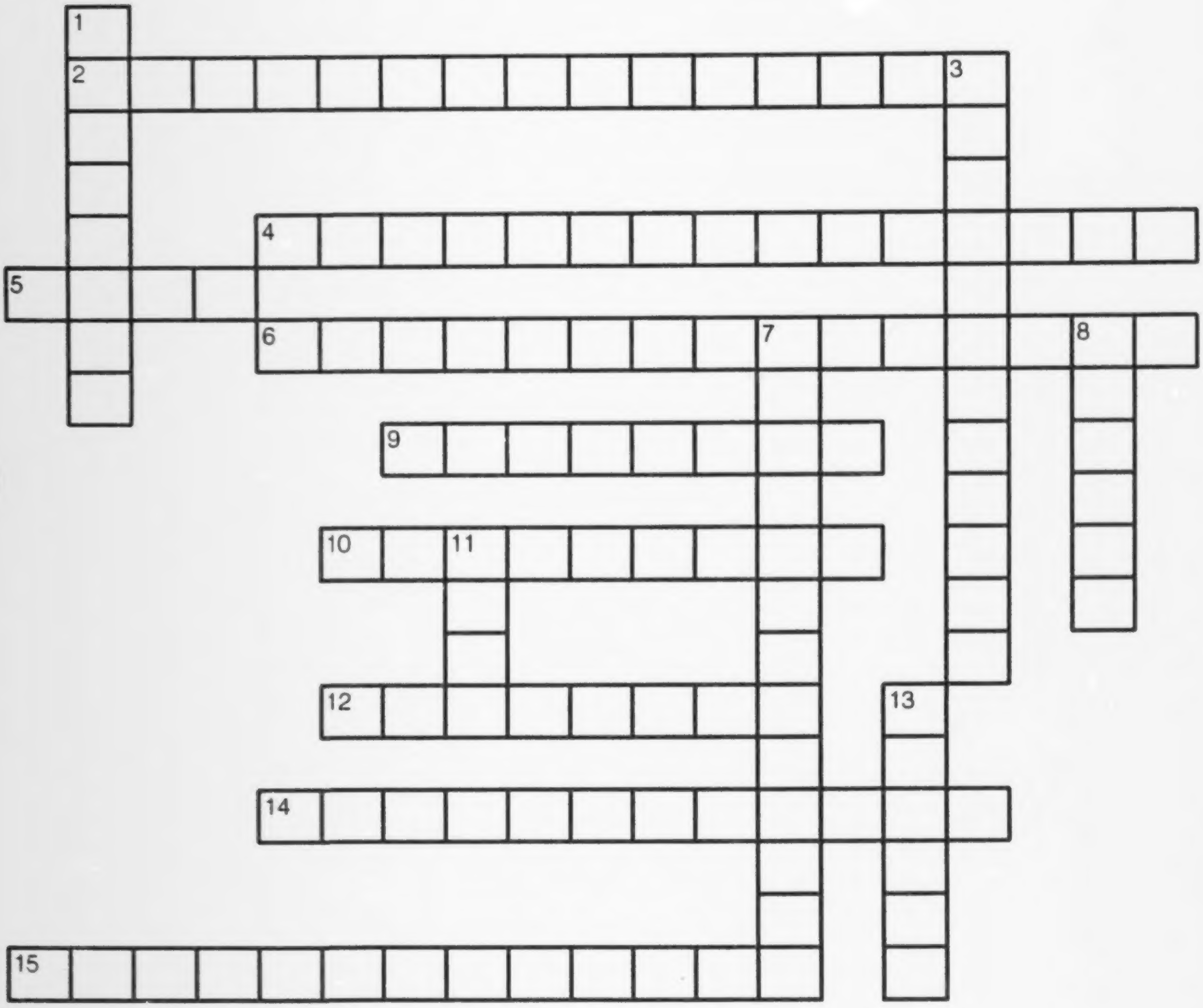
  - **PASCAL** was named for Blaise Pascal, a French inventor. This high-level language is easy to use, powerful, flexible, and self-documenting.
  - C was developed by AT&T to shorten the system programming time and can be used on all computers.

- Utilities are programs designed to enhance and improve PC operations. Many are available as public domain disks. Utilities can be used for options such as undeleting a file that has been deleted accidentally and to back-up and to restore files. DOS contains many of these utilities. Some software programs allow users to perform the commands by a click of a mouse or a single keystroke. Examples include Norton Utilities and PC Tools.

- Application software is usually pre-packaged software that enhances the operation of microcomputers. Some examples of business application software programs are:
  - Word processing programs manipulate words for letters, research papers, books, etc. Examples of word processing programs used in business are *Microsoft Word*, *Microsoft Works*, *PFS Professional Write*, *Word Perfect*, and *Wordstar*.
  - Spreadsheets programs perform mathematical calculations on columns and rows of numbers. Examples of spreadsheet software programs used in business are *Lotus 1-2-3*, *Excel*, *Quattro Pro*, and *Multiplan*.
  - Databases programs organize and sort lists of information. Examples of database software used in business are *dBase III* and *IV*, *Reflex*, *Paradox*, *R:base*, and *Q and A*.
  - Graphics programs are designed specifically for the graphic representations of data. No area of development has advanced more than graphics. Examples of graphics software programs are *Corel Draw*, *Deluxe Paint 2000*, *AutoCAD*, and *Harvard Graphics*.
  - Page-layout programs are designed for desktop publishing. Desktop publishing has become popular because businesses can now design and print their own advertisements, flyers, brochures, and various other documents with minimal cost and time consumption. The two most popular examples of high-end programs are *Xerox Ventura Publisher* and *PageMaker* which are available for both the MS-DOS and Macintosh systems.
  - Communications programs allow communication between computers over phone lines. Telecommunication has increased in popularity because connecting computers and data increases productivity and saves time and money. Some integrated packages have communication programs included such as *Microsoft Works*. Other programs are stand-alones such as *ProComm*.

- Integrated software packages offer several programs in one bundle such as a word processor, a spreadsheet, a database, and graphics or communication programs. Examples include *Microsoft Works*, *Apple Works*, and *Lotus Works*.

ACTIVITY 1: TERMINOLOGY CROSSWORD PUZZLE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ACTIVITY 1: TERMINOLOGY CROSSWORD PUZZLE CLUES

ACROSS

2. A set of commands and files that contains the information the computer needs to access the disk drives of the system.

4. Command used to erase a directory that is no longer needed.

5. Command used to copy one or more files.

6. Command used to change the current path to another directory or subdirectory.

9. Resetting the computer; sometimes done to start programs from a floppy drive.

10. Characters that can stand for anything. They are a shortcut to handling several files at once.

12. Refers to the particular directory or subdirectory which is currently being accessed by MS-DOS commands.

14. A listing of the files located within a directory that has been separated for various purposes.

15. Command used to establish a new, empty directory or subdirectory.

DOWN

1. Powers up the computer

3. Allows for more than one program to be run at the same time.

7. The most basic directory. It branches out into directories and subdirectories.

8. Changes the name of a file without changing its contents.

11. Shows which disk drives/slots contain Pro-DOS formatted disks, and what slot/drive name corresponds to each.

13. A command that initializes a disk according to the specific format of the computer being used.

ACTIVITY 2: BOOTING THE COMPUTER

List the steps required to perform a "cold" and a "warm" boot on your computer system.

Cold Boot:

Warm Boot:

ACTIVITY 3: OPERATING SYSTEM AND ENVIRONMENTS

Project 1

Write the commands to make your computer do the following.

1. Format a disk.

2. Display the contents of the AUTOEXEC.BAT file.

3. Rename a file called JOB1 to PROBLEM1.

4. Copy one entire disk to another disk.

5. Copy a file called PROBLEM1 to another disk.

6. Make a directory under your name.

7. Erase the directory you made under your name.

8. Display what is on the disk in drive B.

9. Change the current path from one directory to another directory.

10. What can be used to indicate a wildcard command?

Project 2

In small groups, discuss what an environment is and what it does. Write a brief description to turn into your instructor. Next, each member of your group should locate articles and additional information about environment. Decide which environment your group would use and give supporting evidence on why you would choose this particular environment.

ACTIVITY 4: TYPES OF SOFTWARE

Write a brief description of each of the following. Give an example of available software.

Programming languages:

Example:

Utility packages:

Example:

Application software:

Example:

SECTION 1

Introduction to Microcomputers

Unit 4: Social Implications

Unit Objective: Students will describe issues related to the responsible use of computer systems, discuss social ramifications of computer usage, and identify responsible practices in the use of computers.

Student Competencies: After completing this unit, the student will be able to:

1. Define terminology related to computer crime, computer users, and new computer devices and techniques.
2. Identify major issues and technological developments related to computers and society.
3. Describe ethical and legal issues that have arisen as a result of the computer revolution.
4. Identify privacy issues involved with electronic data storage.
5. Explain reasons for concern about the reliability of computer systems.

Focus: The responsibility that goes with using a computer is like the responsibility of driving an automobile. If the user is irresponsible, careless, or malicious, the effects of his/her decisions and actions can be damaging and far-reaching.

Terminology

Artificial Intelligence (AI)	A computer science field that attempts to improve computers by giving them some characteristics associated with human intelligence, such as the ability to understand natural language and reason under uncertain conditions.
CD-ROM	The current compact disks for computers, similar to read-only memory; they cannot be erased or recorded on.
Computer crime	Any illegal act for which knowledge of computer technology is used to commit the offense.
Computer ethics	The standard of moral conduct in computer use; the way in which the "spirit" of some laws is applied to computer-related activities.
Data spying	Intentional illegal access to data.
Decision support system	An information-producing system aimed at a particular decision a manager must make.
Encryption	Data that has been translated into a secret code for security reasons.
Expert system	A program that mimics the decision-making logic of human experts.
Hacker	A computer enthusiast who breaks computer security measures designed to prevent unauthorized access to a particular computer system.
Hypergraphics	A method used in teaching or training that allows students, the teacher, and the computer to interact through the use of a response pad and an interconnection box.
Paperless office	A term that implies that all paper documents have been replaced by electronic media and devices.

Piracy	The unauthorized copying of a computer program.
Robotics	The science that deals with robots; their construction, capabilities, and applications.

Social Implications 1-4

Terminology—Viruses

Alameda virus	Replaces the original boot sector with itself; causes loss of data.
Computer virus	A segment of machine-language code that replaces software or data with a copy of itself without authorization.
Datacrime	A virus that breaks down the directory section, making it impossible for a disk's contents to be read.
Hidden virus	A virus that leaves no external signs of its presence after infection.
Host program	The program to which the virus attaches itself.
Infection	The invasion of a virus into a host system.
Isolation	The process a virus uses to identify and distinguish itself from its host program.
Israeli virus	Infects any .COM or .EXE program. Some versions destroy all data on the hard disk, which makes stored programs disappear.
Lehigh virus	Infects COMMAND.COM file; causes loss of all data on hard disk.
Logic Bomb	A virus that checks for a certain action, such as whether an infected program has been executed a given number of times.
Network worms	Programs that use network connections to spread from system to system. They can behave like a virus or plant a virus.
nVIR	Appears in many different varieties, each with its own individual activation characteristics. Causes loss of data and programs and frequent system crashes.
Pakistani Brain virus	Replaces original boot sector with itself and spreads quickly to all bootable disks.

Peace virus	A virus that was created to spread a greeting of world peace and then erase its own instructions, disappearing without a trace.
Replication	The process of self-isolation within the current host program and attachment of the isolated segment to a new host.
Scores virus	Infects any application and causes loss of data due to system crashes.
Time Bomb	A virus that checks for a specific date or time (such as Friday the 13th) before executing its objective.
Trap Door	A segment of code that allows data to be transmitted to the legitimate operator while other data are transferred to an illegal operator.
Trojan Horse	A programmer's placement of unauthorized instructions in a computer operating system for future use in gaining access to restricted information.
Vaccine	Program that watches for typical things viruses do, halts them, and then warns the computer operator.

Computer use issues

As computers do more work in society, new social issues and questions emerge. Many questions arose during the period when large mainframes took over data management in banks, insurance companies, financial institutions, and other large corporations. Others appeared with the proliferation of microcomputers. Effects of computer usage are felt by all of us.

☐ **Dependency**

There are dozens of ways in which our daily activities could be crippled by computer or power failure. Anyone who has had to wait for several minutes because "the computer is down" knows what it means to be dependent on computers. Not learning the status of a credit card account is minor compared to the failure of the police or fire department emergency computer system or an airline reservation system. In many situations, a "manual" substitute, or backup, is totally unsatisfactory.

☐ **Nameless society**

Can we accept being identified by a number instead of a name? We are known to some organizations by our social security number, to others by our drivers license number, and to others by an account number. If we respond to a computerized billing error, we have no assurance that a human will ever see the response. It is unclear what effects this namelessness will have on the quality of our lives or where these effects will lead.

☐ **Technological developments**

- ▲ **Artificial Intelligence (AI)**—a computer science field that attempts to improve computers by giving them some characteristics associated with human intelligence, such as the ability to understand natural language and to reason under uncertain conditions. It is used in expert systems, decision support systems, and robotics.
- ▲ **Robotics**—the science that deals with robots; their construction, capabilities, and applications. Robotics are used for repetitive work, as interoffice mail carriers, in warehouse operations, when working with radioactive materials, and by the handicapped.

  - **AFIS**—automated fingerprint identification system is a computer system that scans a database for fingerprints. It is used by law enforcement agencies and can be used with an expert system to match similar prints.

  - **MDT**—mobile digital terminals are small computer terminals located inside a patrol car. They shorten response time to calls and provide direct computer access to information, such as names and license plates.

  - **CD-ROM**—compact disks for computers are similar to read-only memory; they cannot be erased or recorded on. They are about the same size as a floppy disk, but allow storage and retrieval faster than floppy disks. Each one can hold a gigabyte (a million megabytes) or more. They are used in libraries for storing archival materials.

  - **Hypergraphics**—an instructional aid that allows students, the teacher, and the computer to interact through the use of a response pad and an interconnection box.

- **Computer virus epidemic**—a computer virus is an unauthorized segment of machine-language code that replaces software or data with a copy of itself. Hundreds of viruses exist. Following is a small sample of the most publicized types and the kinds of computers they attack.

  - **Pakistani Brain virus** (IBM and compatibles)
    - Replaces original boot sector with itself.
    - Moves original boot sector to another location.
    - Adds seven sectors which contain the remainder of the virus.
    - Flags all modified sectors as unusable to protect itself.
    - Replicates onto all inserted bootable floppies.

  - **Scores virus** (Macintosh)
    - Infects any application.
    - Increases application size by 7000 bytes.
    - Seeks out new hosts at 3 ½-minute intervals.
    - Creates notepad and scrapbook files in system folder.
    - Creates invisible Scores and Desktop files.
    - Looks for existence of specific file names for destruction.

- ▲ **Israeli virus** (IBM and compatibles)
    - Infects any .COM or .EXE program.
    - Increases program's size by approximately 1800 bytes.
    - Infected programs are modified to become memory resident (TSRs).
    - Programs are infected when they are executed in the infected system.
    - Floppy or hard disks can become infected.
- ▲ **nVIR virus** (Macintosh)
    - Appears in many varieties.
    - Each variety has its own activation characteristics.
    - Publication of the source code for this virus is primarily responsible for wide variations.
    - Infection techniques include:
        - Placing nVIR resource in system file.
        - Infected system infects every application executed.
- ▲ **Alameda virus** (IBM and compatibles)
    - Replaces original boot sector with itself.
    - Stores original boot sector on first free sector.
    - Infects through software re-boot sequence.
    - Does not flag original boot sector as unusable.
- ▲ **Lehigh virus** (IBM and compatibles)
    - Infects COMMAND.COM file.
    - Changes size by approximately 20 bytes.
    - Changes creation date and time.
    - Activates after four infections.
    - Destroys all system data.
- ▲ **Datacrime virus**
    - Breaks down the directory section.
    - Makes it impossible for a disk's contents to be read.
- ▲ **Logic Bomb virus**—checks for a certain action; for example, to see whether an infected program has been executed a preset number of times.

- **Network worms**
  - Attack systems that are linked via communication lines.
  - Found in programs that use network connections to spread from system to system.
  - Can behave like a virus or plant a virus.
- **Time Bomb virus**—checks for a specific date or time (such as Friday the 13th) before executing its objective. Not all time bombs are bad. These can be set to trap someone who is tampering with data in a database.
- **Trojan Horse**—a programmer's placement of unauthorized instructions in a computer operating system for future use in gaining access to restricted information.
- **Trap Door**—a segment of code that allows some data to be transmitted to the legitimate operator while other data are transferred to an illegal operator.
- **Peace virus**—a virus that was created to spread a greeting of world peace and then erase its own instructions, disappearing without a trace.

- **Vaccines**—programs that watch for typical things viruses do, halt those actions, and warn the computer operator.

  Vaccines should be loaded on the hard drive as a step in the AUTOEXEC.BAT file. As the computer boots, the vaccine will automatically scan for viruses. Some will load into RAM. When the vaccine is in RAM, it will trigger alarms or messages and/or stop the system to tell the user the computer is being infected.

  Although many vaccines can be purchased, they are not foolproof. Some viruses can be hidden without the user knowing they exist. When this occurs, the hard drive might have to be reformatted so that nothing is left on it. Vaccines are becoming more sophisticated. The most popular vaccines include *Norton Utilities Antivirus,* and *PC Tools Anti-Virus.*

Legal and ethical issues

Computer crime is any unauthorized act for which knowledge of computer technology is used to commit an offense. Computer crime does not just mean breaking a written law, it also means breaking ethical codes. Prosecution is difficult because of the way the laws are written. Big corporations do not prosecute sometimes because they want the crime "hushed up" so it will not hurt their business. Since corporations do not want to risk losing their stockholders, most computer crimes are settled out of court.

In 1991, a special unit was set up in the U. S. Department of Justice specifically to combat computer crime.

☐ Data spying

Data spies normally "look" at data but do not alter or delete it. In most data spying cases, unauthorized persons learn passwords or otherwise bypass security procedures to gain information from a competitor or for personal gain. They usually access the information by using their telephones and personal computers to link with the system they are breaking into. Industry must go to great lengths to improve password and log-on procedures to prevent this kind of activity.

☐ Hackers

Hackers are computer enthusiasts who break computer security measures designed to prevent unauthorized access to a particular computer system. While few of these individuals actually engage in unauthorized or illegal activities, those few give a bad name to the whole class of gifted experimenters. Rather than wanting to steal, destroy or alter data, a hacker is most often simply challenged by the idea of breaking the codes that protect systems.

☐ Employees or former employees

Personnel who have access to confidential data are subject to temptations to reveal or sell information. Disgruntled or fired employees have been known to sell or give away data, or remove or alter important records from files for revenge. When an employee changes jobs, the knowledge about confidential information acquired in his/her former job may put him/her in an awkward position. The ethical issues involved are complex.

☐ Piracy

Piracy is the unauthorized copying of a computer program. This crime has become "big business" all over the world. Software programmers are no longer putting copy protection on their programs, which makes pirating easier.

☐ Legal issues

The courts have ruled that computer programs are protected under the copyright laws. Programs are easy to copy, making the law difficult to enforce. Some publishers have gone to great lengths to insert special routines or viruses into their software to prevent illegal copying, but no method has been foolproof and programs to break the copy protection routines are as common as the protection routines themselves. Other publishers rely on the honor system, hoping that legitimate users will appreciate the trust which permits them to protect their own interests by making archival backups. The trend among major software companies is to offer unprotected versions of their copyrighted software programs. Some companies sell site licensing contracts to businesses and schools. Some companies enclose a copyright page inside the software package container. They think it is more reasonable to rely on computer operators' ethical code than on laws.

Privacy issues

When business was transacted using handwritten or typed documents, there was a high degree of control over the destination of copies of the information. Now, once data is entered on computers, control is more difficult. The originator of the data, a person who filled out an employment application, for example, has little idea where the information can end up. Confidential data is processed by many organizations.

☐ **Credit bureaus**

The sole purpose of these organizations is to keep up-to-date records on the financial activities of individuals and businesses. Data are compiled from member or affiliate businesses who subscribe to their services. A problem for the person holding an account is that inaccurate information can be difficult to remove from credit bureau records. Sometimes it is easier for creditors to get information than it is for the individual concerned.

☐ **Data banks**

There was once a proposal for a huge national data bank in which all the information about every citizen gathered by all state and local agencies would be stored. Using a social security number, any agency could have access to everything known about the person assigned that number. The bank could save huge amounts of money by preventing much duplication of effort and making information more accessible. Several members of Congress saw the plan as a serious threat to privacy, and the data bank was never created. There are, however, many data bases within businesses and state and local governments that hold a great deal of confidential data about persons. Improper access to these databases can be damaging.

☐ **Paperless offices**

This term implies that all paper documents have been replaced by electronic media. Office personnel may object to a "paperless office" because memos, reports, etc., are no longer confidential. Security and passwords have to be controlled in order for sensitive information to be sent on the system.

▲ Encryption is translating data into a secret code for security reasons. People who send E-mail messages to a specific person use encryption. Encryption is used to deter computer crime.

☐ **Security methods**

▲ **Tamper test**—a security program installed to test whether or not the system has been changed.

- **Time bombs**—designed to catch anyone tampering with data; experienced programmers cannot break through because there is no way to know how many bombs have been set.
- **Smoke screen**—fake messages that make the violator believe that he/she is getting to important information.
- **Baited trap**—usually placed within the heart of a program where the offender likes to look and tamper with the data; reveals tampering.
- **Execution tracing**—as a program proceeds step-by-step, or module-by-module, it pinpoints each step.

Reliability of systems

Systems are made up of hardware, software, and people. Reliability is a factor in all of these elements.

Hardware

Although computer breakdowns are not as frequent as the public perceives, hardware breakdowns do occur. No matter what kind of a computer is used, there should **always** be a backup plan so that a hardware problem does not cripple the operation. With mainframes, most organizations have a plan for backup operation of critical systems. The expense of the backup is justified by the importance and timeliness of the data. Minicomputers are smaller than mainframes; however, the minis have the same capabilities as a mainframe. Most companies have some form of backup in case of failure. When failures occur with microcomputers, the work can usually be transferred to another computer.

Software

There is a saying that, "There is no such thing as a program without bugs, only programs for which all the bugs have not yet been discovered." Reputable software companies are responsive to users who have problems and often provide subscription support services. As with storage, frequent backup copying is the best defense against software failure.

Storage media

Magnetic tape and disk packs are still being used on mainframes and minicomputers. Diskettes, or fixed disks, are used for microcomputer storage. Making backup copies of important data should be a regular activity, with the frequency of copying dependent on the difficulty of recovering lost data. When using magnetic tape or disk packs, they should be checked at regular intervals for wear and flaws. When fixed (hard) disks are used, the copies should be on the another disk. Floppy disks should be inspected regularly for wear or flaws.

☐ Knowledge

Technical knowledge and formally written, precise, and detailed procedures for all computer operator jobs is important. In large computer shops, several people are trained to do each job, and substitutes can step in when needed. In an office using microcomputers, where only one person is assigned to a job, written procedures can prevent chaos.

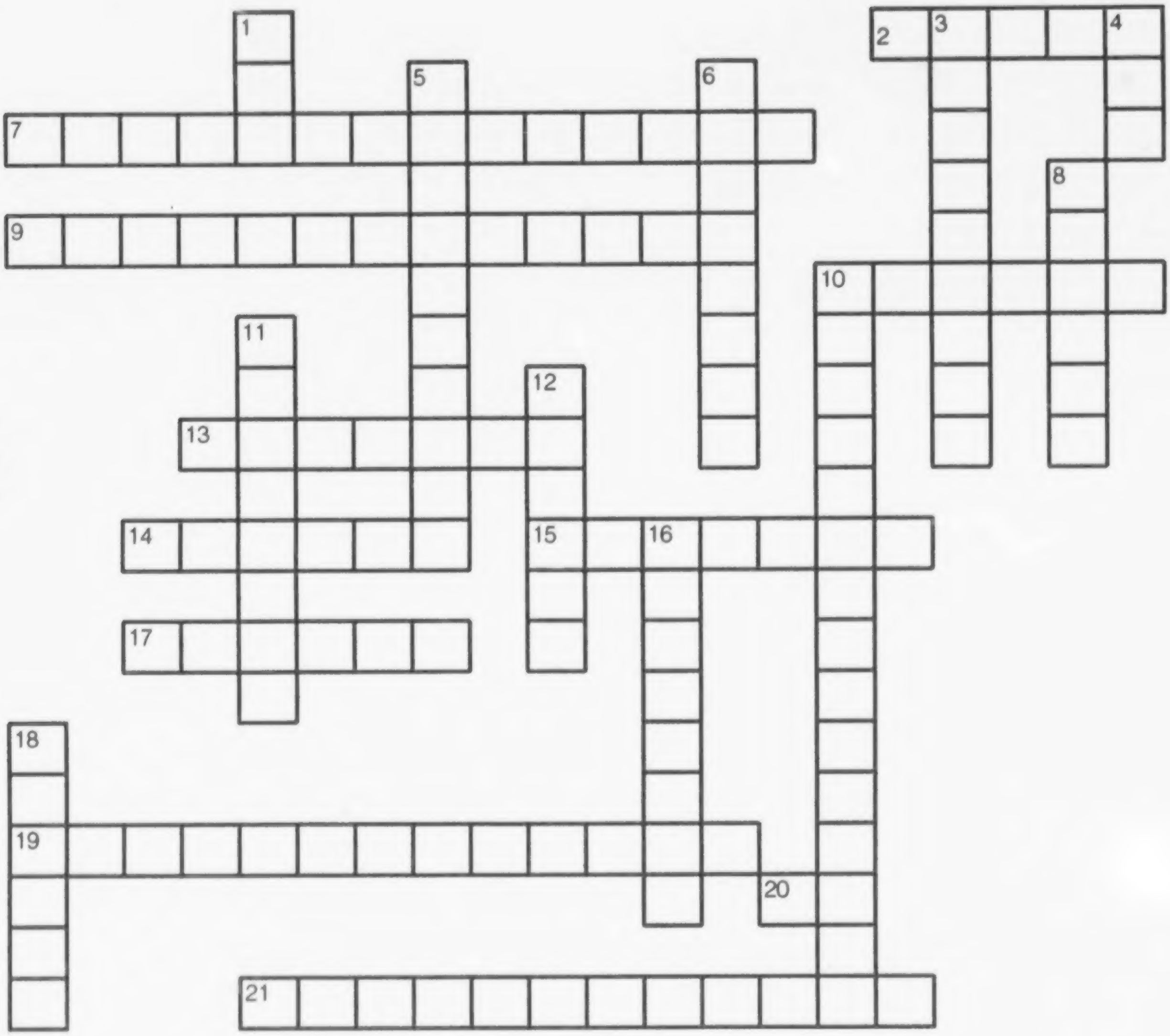
☐ Integrity

Computer professionals at all levels come in contact with private or even secret data. Just as medical personnel and lawyers must preserve the confidentiality of their patients' or clients' records, a data entry operator is expected not to divulge data that passes across his/her desk or terminal. Computer information must remain the property of the employer. After leaving one job for another, even when fired, former employees should not divulge computer information.

☐ Accuracy

The most frequent cause of erroneous data is careless behavior by employees such as inaccurate key entry, failure to follow procedures for verification, leaving a workstation unattended, and overlooking an item of data. Not following specified exiting procedures can cause files to be inaccessible. Improper care of equipment and disks can cause inaccuracies in data.

ACTIVITY 1: TERMINOLOGY CROSSWORD PUZZLE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ACTIVITY 1: TERMINOLOGY CROSSWORD PUZZLE CLUES

ACROSS

2. The current compact disks for computers, similar to read-only memory.

7. A virus that replaces the original boot sector with itself and spreads quickly to all bootable disks.

9. Any illegal act for which knowledge of computer technology is used to commit the offense.

10. The unauthorized copying of a computer program.

13. A program that watches for typical things viruses do, halts them, and then warns the computer operator.

14. A virus that leaves no external signs of its presence after infection.

15. A virus that infects any .COM or .EXE program.

17. A virus that infects applications and causes loss of data due to system crashes.

19. An instructional aid used in teaching or training that allows the student, the teacher, and the computer to interact, through the use of a response pad and an interconnection box.

20. A computer science field that attempts to improve computers by giving them some characteristics associated with human intelligence.

21. A program that mimics the decision-making logic of human experts.

DOWN

1. An information-producing system aimed at a particular decision that is to be made.

3. A virus that breaks down the directory section, making it impossible for a disk's contents to be read.

4. Small computer terminals located inside patrol cars.

5. A term describing data that has been translated into a secret code for security reasons.

6. A virus that checks for a specific date or time before executing its objective.

8. A computer enthusiast who breaks computer security measures designed to prevent unauthorized access to a particular computer system.

10. A term that implies that all paper documents have been replaced by electronic media and devices.

11. A segment of code that allows data to be transmitted to the legitimate operator while other data are transferred to an illegal operator.

12. A virus that infects the COMMAND. COM file.

16. The science that deals with robots, their construction, capabilities, and applications.

18. A term used to refer to the standard of moral conduct in computer use.

ACTIVITY 2: ISSUES

Project 1

As our society becomes more dependent on computers and we become a "nameless society," many problems arise. Write a one-page essay about how computer dependency and the nameless society affect you.

Project 2

Write a short paragraph explaining why computer crime is a growing concern. Then, write your views on piracy and prosecuting computer crime.

1. Computer crime

2. Piracy

3. Prosecuting computer crime

Project 3

Define the following and give an example of how each is used in business.

1. Artificial Intelligence

2. Robotics

3. AFIS

4. MDT

5. CD-ROM

6. Hypergraphics

Activities

ACTIVITY 3: LEGAL AND ETHICAL ISSUES

Project 1

Write a short paragraph describing what you would do if you were in the following situations.

Situation 1

A friend just bought the last copy of a computer game that you have wanted for a long time. You have not been able to afford the game. Your friend tells you that since there is no copy protection on the diskette, he/she will make a copy and give it to you. What would you do?

Situation 2

Your school has just purchased a spreadsheet package for the computer lab. You have a home computer, and one of your classes requires a lot of work done with a spreadsheet. The copy in the lab is not copy protected. Your best friend is the lab assistant and he/she tells you that if you want a copy of the spreadsheet package, you can copy it from one of the terminals. What would you do?

Situation 3

You have a home computer and your brother likes to "play" with the computer. One Saturday afternoon, he tells you that he has broken into someone's computer bank. What would you do?

Project 2

Even though both federal and state laws are enacted to stop computer crime, many of the laws are not enforced. Of the following, research two and explain what the laws are, what they cover, and what, in your opinion, would improve them.

1. *Fair Credit Reporting Act of 1970*
2. *Freedom of Information Act of 1970*
3. *Federal Privacy Act of 1974*
4. *Counterfeit Access Device and Computer Fraud and Abuse Act of 1984*
5. *Small Business Computer and Security Education Act of 1984*
6. *Title 18 U.S. Code,* Section`1029
7. *Foreign Corrupt Practices Act of 1977*
8. *Texas Penal Code,* Section 33.01-33.05
9. Other laws suggested by the instructor

ACTIVITY 3: (Continued)

Project 3

Choose three viruses described in this unit or discussed in class and explain what each does to a computer system.

1.

2.

3.

ACTIVITY 4: PRIVACY ISSUES

Using current articles, write a report on what could be done to improve security in each of the following areas. Use terms discussed in the unit such as E-mail, vaccines, encryption, etc.

1. Credit bureaus
2. Data banks
3. Paperless offices

1-4 Social Implications

Activities

ACTIVITY 5: RELIABILITY OF SYSTEMS

Complete the following.

1. Name at least five types of hardware.

    1)

    2)

    3)

    4)

    5)

2. What can be done to protect software from failure?

3. Name three types of data storage.

    1)

    2)

    3)

4. Write a short paragraph about the relationship between people, confidentiality, and accuracy.

SECTION 2
Word Processing

Essential Elements: 75.87 (j)(1)(B), (2)

1. **Fundamental concepts and operational skills related to microcomputer systems. The student shall be provided opportunities to:**

   B. demonstrate competency in touch keyboarding, including technique, speed, and accuracy.

2. **Fundamental concepts and skills necessary for microcomputer-based document production, formatting and proofreading, at least including use of word processing software and automatic spell checking software. The student will be provided opportunities to:**

   A. identify and use the terminology related to word processing;

   B. demonstrate the operational procedures used in document production and page layout; and

   C. employ appropriate steps in producing documents.

Lesson Plan

Essential Elements: 75.87 (j)(1)(B), (2)(a)(B)
Allocated Time: 5/10 Hours

Unit Objective: Students will use terms common to word processing, identify the steps in the document cycle, and be familiar with production features and commands of word processing software programs. Students should also be able to move around documents, enter data, save information, and edit documents.

Student Competencies: After completing this unit, the student will be able to:

1. Use word processing terminology.
2. Describe the steps in the document cycle.
3. Categorize the production features of word processing software.
4. Demonstrate the ability to move around documents, enter data, save a file, and edit documents.

Focus: Terminology associated with word processing is becoming a part of everyday business vocabulary, and the features and capabilities of word processing software are becoming as well known as the typewriter keyboard was in the 1960s. Word processing has become synonymous with typewriting. It is a skill being used in all phases of business.

Domains: Activities and competency tests provide learning experiences within the cognitive, psychomotor, or affective domains and are coded on the Activity and Competency Test Matrices.

Basic Skills: Activities and competency tests reinforce the basic skills of reading, writing, and mathematics and are coded on the Activity and Competency Test Matrices.

2-1 Introduction to Word Processing

Content Outline

Background

The document cycle

Production features

Word processing application features
File functions
Formatting options
Editing features
Additional production features

Teacher Activities

Teacher Preparation

☐ Preview the unit.
☐ Review unit objectives.
☐ Make instructional analysis.
☐ Assess student learning needs.
☐ Decide on lesson domain: cognitive, psychomotor, or affective domain.
☐ Select instructional materials based on instructional analysis and student learning needs.
☐ Select instructional strategies based on lesson content and student learning needs.
☐ Prepare lesson plans from the unit lesson.
☐ Prepare additional instructional material.
☐ Reserve necessary media and equipment.

Teacher Presentation

☐ Present student objectives.
☐ Establish rapport with students.
☐ Review lesson objectives with students.
☐ Relate lesson to prior or future learning.
☐ When appropriate, encourage student interaction through questioning, discussions, or some other strategy.
☐ Emphasize the value/importance of the unit or activity.
☐ Allow time for closure of a lesson.

Reteach Activities

☐ Identify area(s) of weakness from results of evaluation.
☐ Select unit activities not previously used.
☐ Use additional resources and/or create materials based on student learning needs.
☐ Use a different teaching strategy in reteaching.
☐ Retest.

Specific Teaching Activities

☐ Produce transparencies illustrating the features of the software to be used.

☐ Set up a visit to a school office or local business where students can observe the "life" of a document, from input to storage and retrieval.

☐ Use a flow chart to illustrate the path of a document as it proceeds through the processing cycle.

☐ Discuss the function keys that are specific to your word processing software program.

☐ Most teachers will be faced with a mix of students who know keyboarding and students who do not. It is advantageous for students to learn keyboarding by touch; however, you should not spend too much time helping students who missed typewriting classes to progress to the skill level of the experienced students.

☐ Many good software programs that teach keyboarding skills are available at a nominal cost. Many are game-like and fun to use. These programs need little supervision, and would be an excellent resource for helping those students who have not taken keyboarding.

☐ Remember to use the *Test Builder Program* and the related Test Bank. Refer to Appendix D for the *MAP Test Bank* question revisions for Section 2, Unit 1.

Activity 4

Project 1 A worksheet has been provided for students to fill in information about the operation of the word processing program you use. You may want to use this worksheet as it is presented or make changes as needed to fit your word processing program. You may wish to cover part of the information in this unit and the rest in Unit 2.

Project 3 Provide instructions for the students to format Activity 4, Project 2. You may want the students to proofread, center and bold the heading, and place returns after each main point made in the poem.

Competency Test

Part IV Provide a document and instructions on formatting and editing the document.

Worksheet for Word Processing Instructions

1. Load the word processing program ______________________
2. Open a new document ______________________
3. Retrieve an existing document ______________________
4. Display help ______________________
5. Move one character left ______________________
6. Move one character right ______________________
7. Move one line up ______________________
8. Move one line down ______________________
9. Move one word left ______________________
10. Move one word right ______________________
11. Move to the beginning of a line ______________________
12. Move to the end of a line ______________________
13. Move to the top of a document ______________________
14. Move to the bottom of a document ______________________
15. Move to the top of the screen ______________________
16. Move to the bottom of the screen ______________________
17. Scroll the screen up ______________________
18. Scroll the screen down ______________________
19. Scroll the screen right ______________________
20. Scroll the screen left ______________________
21. Move to the next page ______________________

22. Move to the previous page ____________________
23. Move to a specific page ____________________
24. Move to the next tab stop ____________________
25. Move to the previous tab stop ____________________
26. Typeover ____________________
27. Insert ____________________
28. Enter text ____________________
29. Delete ____________________
30. Save a file ____________________
31. Print a document ____________________
32. Stop printing ____________________
33. Clear the screen and memory ____________________
34. Set tabs ____________________
35. Set margins ____________________
36. Change fonts ____________________
37. Highlight a word ____________________
38. Cut and paste ____________________
39. Spell checker ____________________
40. Quit the program ____________________
41. Set margins ____________________
42. Set line spacing ____________________
43. Paragraph indent ____________________
44. Bold characters ____________________
45. Underline characters ____________________

46. Italic characters ______________________________

47. Justify ______________________________

48. Headers and footers ______________________________

49. Page numbers ______________________________

50. ______________________________

51. ______________________________

52. ______________________________

53. ______________________________

54. ______________________________

55. ______________________________

56. ______________________________

57. ______________________________

58. ______________________________

59. ______________________________

60. ______________________________

61. ______________________________

62. ______________________________

63. ______________________________

64. ______________________________

65. ______________________________

66. ______________________________

67. ______________________________

68. ______________________________

69. ______________________________

Student Names: ____

Document No: __________

Input:

Processing:

Output:

Distribution:

Storage:

Retrieval:

ACTIVITY MATRIX

Activities	Domains			Basic Skills		
	Cognitive	Psycho-motor	Affective	Reading	Writing	Math
1	X			X	X	
2	X		X	X	X	
3	X				X	
4 Project 1	X				X	
Project 2	X	X		X	X	
Project 3	X	X		X	X	

COMPETENCY TEST MATRIX

Parts	Domains			Basic Skills		
	Cognitive	Psycho-motor	Affective	Reading	Writing	Math
I	X			X		
II	X			X		
III	X				X	
IV	X	X		X	X	

Introduction to Word Processing 2-1

Competency Test

PART I: TERMINOLOGY

Place the appropriate letter in the blank provided.

A. Backup
B. Copy
C. Cut and paste
D. Delete
E. Edit
F. Footer
G. Hardcopy
H. Insert
I. Justify
J. Move
K. Orphan
L. Pitch
M. Proportional
N. Ruler
O. Scrolling
P. Typeover
Q. Widow
R. Word wrap

__________ 1. The first line of a paragraph at the bottom of a page before a page break.

__________ 2. A capability of some systems in which spacing is adjusted according to the character.

__________ 3. To erase characters from a document and close up the vacated space.

__________ 4. Print with straight margins on both sides.

__________ 5. A duplicate file.

__________ 6. Changing the location of a block of text within a document.

__________ 7. A feature that sends text to the beginning of the next line when you type beyond the margin.

__________ 8. Moving a portion of the text on screen into view.

__________ 9. Written, keyed, or printed copy; a document.

__________ 10. To reproduce a block within a document or in another document.

__________ 11. A condition in which characters are replaced, rather than inserted, when keyed into existing text.

__________ 12. A line of text repeated at the bottom of each page.

__________ 13. To remove a block from one part of a document and place it in another location.

__________ 14. The measure of type size (characters per inch).

__________ 15. A guide displayed on the screen by some word processors to assist in formatting.

2-1 Introduction to Word Processing

Competency Test

PART II: THE DOCUMENT CYCLE

Match each of the statements with one of the steps in the document cycle.

DOCUMENT CYCLE STEPS

A. Input
B. Output
C. Distribution
D. Processing
E. Storage
F. Retrieval

________ 1. A form letter saved on disk is loaded into memory.

________ 2. Copies of a memo about the office vacation schedule are sent to each supervisor.

________ 3. A personal resume is modified to reflect new information.

________ 4. Tape-recorded meeting notes are keyed into a computer.

________ 5. An essay is checked by the computer for spelling errors.

________ 6. A "thank you" note is printed on a daisy wheel printer.

________ 7. Last year's annual meeting agenda is loaded and displayed on the screen to recall the date of the meeting.

________ 8. After completing a detailed report, a copy is saved on disk.

________ 9. A letter is reformatted with different margins.

________ 10. A secretary keys in a reply to a letter.

________ 11. After editing and correcting, the meeting minutes are printed.

________ 12. Copies of a contract are delivered to each party.

Competency Test

PART III: PRODUCTION FEATURES

Describe each of the following production features. Provide and describe one more for each category.

Word processing application features

1. Thesaurus
2. Search and replace
3.

File functions

1. File management
2. Accessing a file
3.

Formatting options

1. Tab stops
2. Right-justification
3.

PART III: (Continued)

Common editing features

1. Insert and replace
2. Cut and paste
3.

Additional production features

1. Style checkers
2. Macros
3.

Competency Test

PART IV: BASIC DOCUMENT PRODUCTION

Key in the following document and perform the editing requested by your instructor.

TO: All sales personnel

FROM: Robert Gomez

DATE: April 22, 19xx

SUBJECT: Fiscal Rebids and New Client Sales Performances

This process must have a more rigorous review by district managers, regional sales directors, division sales vice president, regional vice presidents and division staff. Surely we know from experience in the client accounts that we already serve what the cost of serving a comparable client is going to be. We have acquired a considerable amount of both good and bad experience from our new client account openings, during the past five years and beyond.

We must communicate with one another to compare notes, take off the rose-colored glasses and look realistically at what the costs are going to be for starting up these new accounts. This fiscal year must be a year of consolidation. Sell new client accounts that hold the most promise, especially those which have been self-operated. They should be brought on and sold at a price level that we can digest into our regions and division without killing ourselves, economically speaking.

Our current market is filled with potential, but we are not working at the optimal potential. With everyone working together, we can make this fiscal year a success and get back on track. Let's intensify our communication with one another and especially our sense of urgency in the days ahead.

A meeting will be held Monday of next week so that we can discuss questions and decide upon goal for this coming fiscal year.

xx

Activity Answers

Activity 1

1. Pitch
2. Proportional spacing
3. Justify
4. Margins
5. Header
6. Footer
7. Center
8. Tabs
9. Indent
10. Hanging Indentation
11. Formatting
12. Ruler
13. Editing
14. Typeover
15. Deleted
16. Move
17. Block
18. Cut and Paste
19. Copy
20. Hyphenating
21. Widows
22. Orphans
23. Page breaks

Activity 2 Evaluated to the satisfaction of the instructor.

Activity 3 Evaluated to the satisfaction of the instructor.

Activity 4

Project 1 Answers will vary depending on the word processing program and the computer used.

Projects 2-3 Evaluated to the satisfaction of the instructor.

Competency Test Answers

Part I

1. Q
2. M
3. D
4. I
5. A
6. J
7. Q
8. O
9. G
10. B
11. P
12. F
13. C
14. L
15. N

Part II

1. F
2. C
3. D
4. A
5. D
6. B
7. F
8. E
9. D
10. A
11. B
12. C

Part III

The third feature listed is to be evaluated to the satisfaction of the instructor.

Word processing application features

1.	Thesaurus:	Provides the user with synonyms. A list of synonyms is displayed by pointing with the cursor to a word in the text and accessing the Thesaurus command. Words may be replaced or left unchanged.
2.	Search and replace:	Allows the user to search a document for a specific word, phrase, or format and then replace it with another.

File functions

1.	File management:	Used to delete, rename, or print one or several files at the same time without leaving the program.
2.	Accessing a file:	Used when retrieving an existing file that needs to be modified or another hardcopy is required.

Formatting options

1.	Tab stops:	Used to indent text and align columns and lists. The number and types of tab stops available varies with the software program. Generally left, right, center, and decimal tabs can be set in most programs.
2.	Right-justification:	Space is added between the words in lines of text so that the right margin is even.

Editing features

1.	Insert and overtype:	Add to or replace text in existing documents. Using the insert mode allows characters to the right of new text to move to make room for it. Using the overtype mode, the text does not move, and the new text replaces the old.
2.	Cut and paste:	Used when words, sentences, paragraphs, and entire pages of text are correct, but out of sequence. Identifies text that is to be moved from its present location, and inserts it into the new location.

Additional production features

1.	Style checkers:	Used to check text for style and usage.
2.	Macros:	Short cuts used to record a series of keystrokes and then play back the series with a specific key code.

Part IV Evaluated to the satisfaction of the instructor.

Lesson Plan

Essential Elements: 75.87 (j)(2)(B)(C)
Allocated Time: 7.5/15 Hours

Unit Objective: Students will classify documents, format and edit documents using production features, and prepare mailable documents using at least one word processing software product.

Student Competencies: After completing this unit, the student will be able to:

1. Classify common documents by type.
2. Format and edit documents.
3. Prepare mailable documents using a word processing program.

Focus: The microcomputer has virtually replaced the typewriter as the dominant tool for producing individual documents. Without training and practice with appropriate software, you are not able to make use of the computer's vast capabilities. Many types of documents, at one time only created by professional typists, are now produced on microcomputers by persons of all ages and occupations.

Domains: Activities and competency tests provide learning experiences within the cognitive, psychomotor, or affective domains and are coded on the Activity and Competency Test Matrices.

Basic Skills: Activities and competency tests reinforce the basic skills of reading, writing, and mathematics and are coded on the Activity and Competency Test Matrices.

2-2 Document Production Procedures

Content Outline

Types of documents

Business document formats

- Memorandums
- Business letters
- Business reports
- Columnar reports

Teacher Activities

General Teacher Preparation

- ☐ Preview the unit.
- ☐ Review unit objectives.
- ☐ Make instructional analysis.
- ☐ Assess student learning needs.
- ☐ Decide on lesson domain: cognitive, psychomotor, or affective domain.
- ☐ Select instructional materials based on instructional analysis and student learning needs.
- ☐ Select instructional strategies based on lesson content and student learning needs.
- ☐ Prepare lesson plans from the unit lesson.
- ☐ Prepare additional instructional material.
- ☐ Reserve necessary media and equipment.

Teacher Presentation

- ☐ Present student objectives.
- ☐ Establish rapport with students.
- ☐ Review lesson objectives with students.
- ☐ Relate lesson to prior or future learning.
- ☐ When appropriate, encourage student interaction through questioning, discussions, or some other strategy.
- ☐ Emphasize the value/importance of the unit or activity.
- ☐ Allow time for closure of a lesson.

Reteach Activities

- ☐ Identify area(s) of weakness from results of evaluation.
- ☐ Select unit activities not previously used.
- ☐ Use additional resources and/or create materials based on student learning needs.
- ☐ Use a different teaching strategy in reteaching.
- ☐ Retest.

Specific Teaching Activities

☐ The student should not be expected to achieve mastery of the software, but to gain a practical skill level and be aware of the options available with most word processing packages. It is recommended that an integrated software program rather than a stand-alone word processing program be used.

☐ Assemble samples of various categories of documents that might have been produced by a word processor. These can be displayed in the classroom.

☐ Prepare transparencies outlining procedures to use with lecture and discussion.

☐ For each activity, go over the appropriate instructions specific to your computer and word processing software requirements.

☐ Make available a hands-on tutorial for individual instruction in the use of the software.

☐ Ask students to share with the class the various examples of word processing documents they have collected.

☐ Arrange a competition among individuals or teams to produce assigned documents correctly, in the shortest time.

☐ The simulation for this section is *Kandy's Kandlesticks*. You can use this as a culmination activity or test for the section or save it for the course closure. The simulation stresses word processing and editing. Refer to the special products page located at the front of this book for additional simulations that can be used if this course is the only office education course taught at your school.

☐ Remember to use the *Test Builder Program* and the related Test Bank. Refer to Appendix D for the *MAP Test Bank* question revisions for Section 2, Unit 2.

Activity 1

Approve the students' selections for this activity. When the student decides which document to key in, be sure to give instructions on how you want the document formatted.

Activity 2

Project 1 Provide the students with an instruction sheet on how to format the document. You may suggest centering, underlining, bolding, changing fonts, and font sizes.

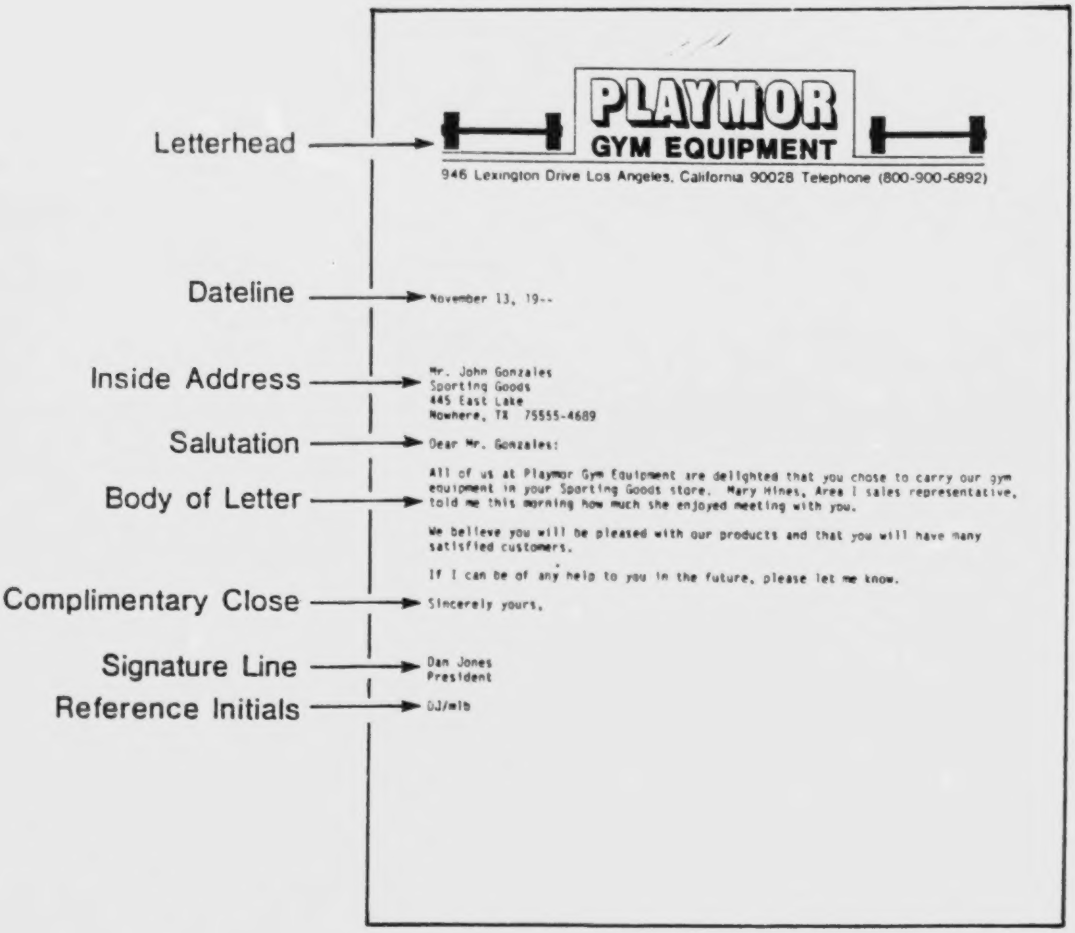
Project 2 Provide the students with a document from one of your sources. Have the students key it in, edit it, and format it according to your instructions.

Activity 3

Projects 1-3 Give the students a memo, letter, and table and the instructions on how to format each document. You may wish to use the handouts provided for the students to key in.

Project 4 The report has been included. Give the students instructions on how to format the document.

Basic Letter Parts


Letterhead
Dateline
Inside Address
Salutation
Body of Letter
Complimentary Close
Signature Line
Reference Initials

PLAYMOR
GYM EQUIPMENT
946 Lexington Drive Los Angeles, California 90028 Telephone (800-900-6892)

November 13, 19--

Mr. John Gonzales
Sporting Goods
445 East Lake
Nowhere, TX 75555-4689

Dear Mr. Gonzales:

All of us at Playmor Gym Equipment are delighted that you chose to carry our gym equipment in your Sporting Goods store. Mary Hines, Area I sales representative, told me this morning how much she enjoyed meeting with you.

We believe you will be pleased with our products and that you will have many satisfied customers.

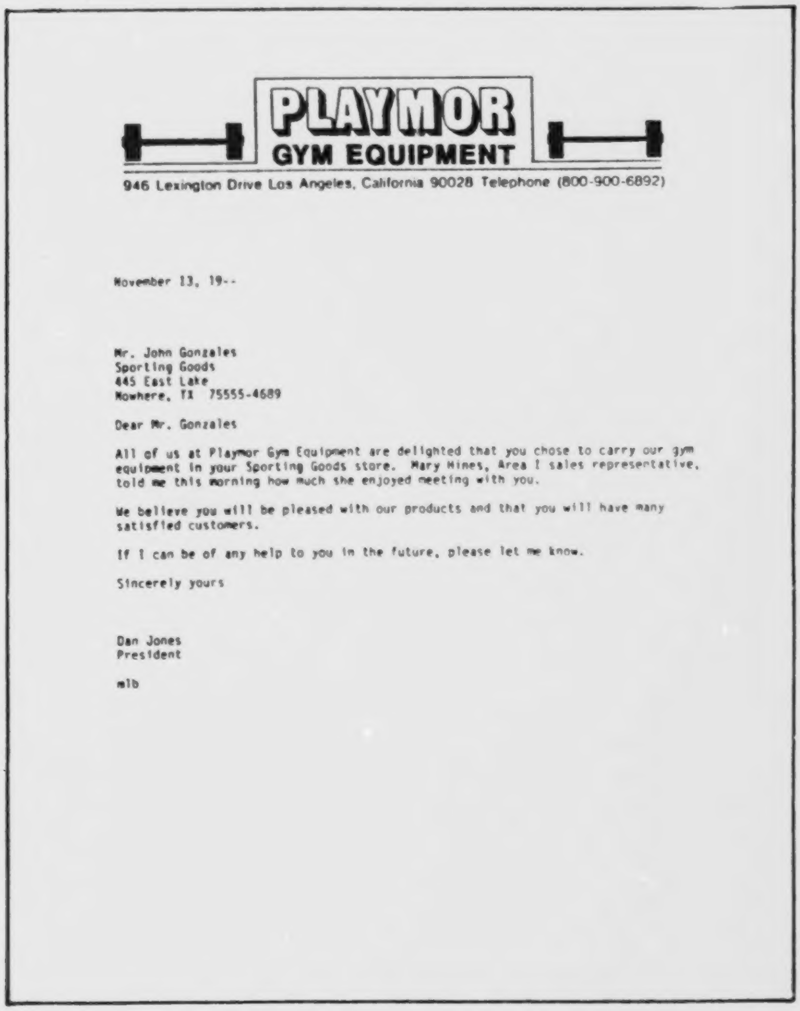
If I can be of any help to you in the future, please let me know.

Sincerely yours,

Dan Jones
President

DJ/mlb

Block Style, Open Punctuation



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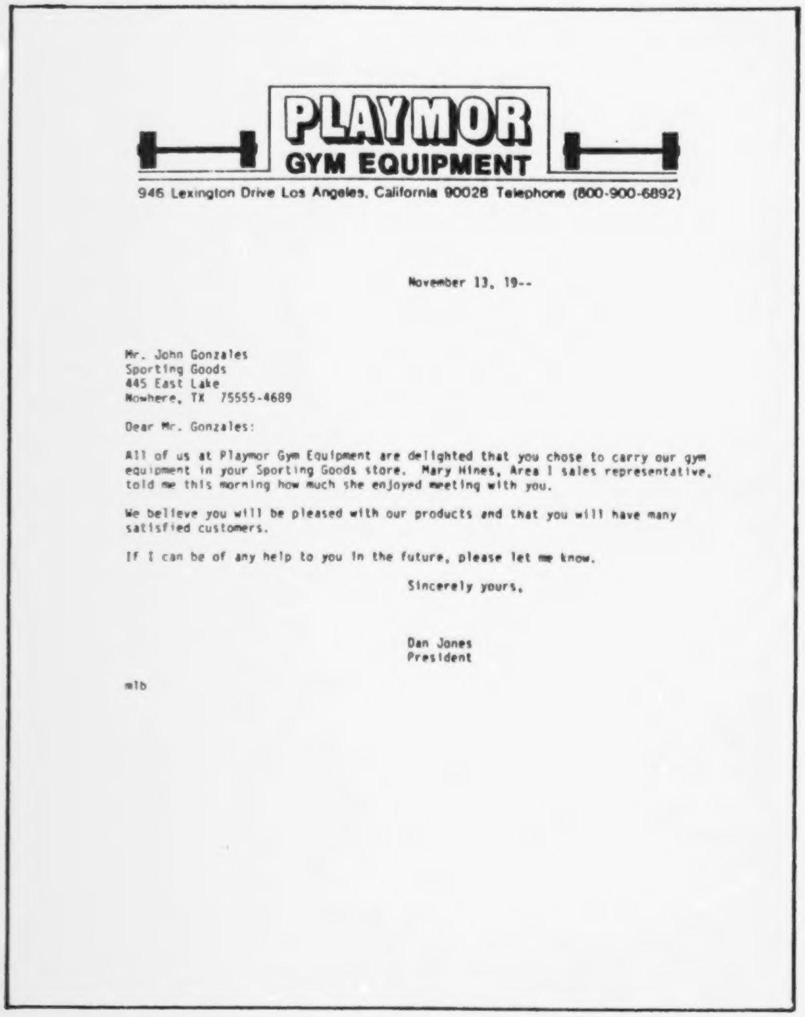
If I can be of any help to you in the future, please let me know.

Sincerely yours

Dan Jones
President

mlb

Modified Block Style, Mixed Punctuation



PLAYMOR
GYM EQUIPMENT
946 Lexington Drive Los Angeles, California 90028 Telephone (800-900-6892)

November 13, 19--

Mr. John Gonzales
Sporting Goods
445 East Lake
Nowhere, TX 75555-4689

Dear Mr. Gonzales:

All of us at Playmor Gym Equipment are delighted that you chose to carry our gym equipment in your Sporting Goods store. Mary Hines, Area 1 sales representative, told me this morning how much she enjoyed meeting with you.

We believe you will be pleased with our products and that you will have many satisfied customers.

If I can be of any help to you in the future, please let me know.

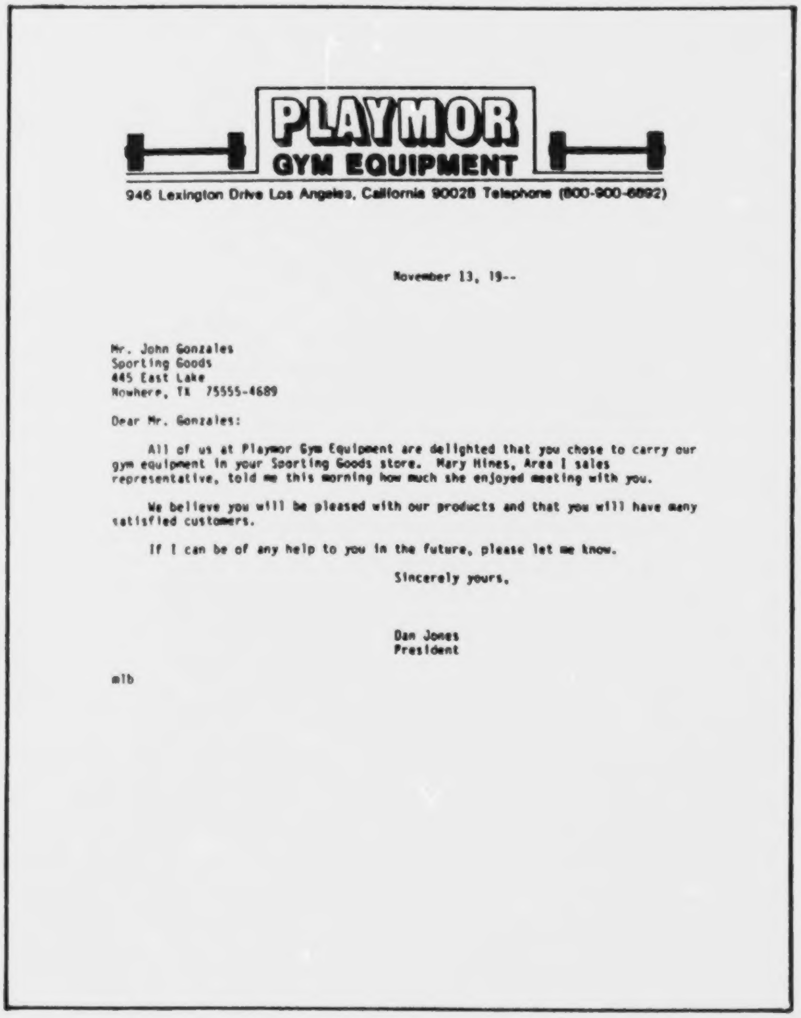
Sincerely yours,

Dan Jones
President

mlb

BEST COPY AVAILABLE

Modified Block, Indented Paragraphs



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GYM EQUIPMENT
946 Lexington Drive Los Angeles, California 90028 Telephone (800-900-6892)

November 13, 19--

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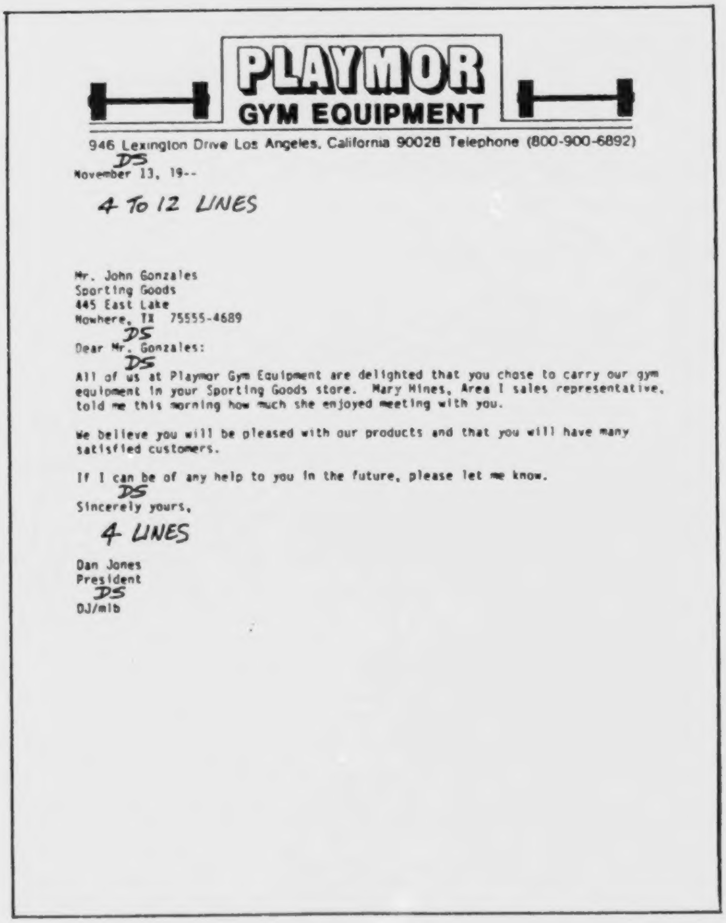
If I can be of any help to you in the future, please let me know.

Sincerely yours,

Dan Jones
President

mlb

Standard Placement



PLAYMOR
GYM EQUIPMENT
946 Lexington Drive Los Angeles, California 90028 Telephone (800-900-6892)

DS
November 13, 19--

4 To 12 LINES

Mr. John Gonzales
Sporting Goods
445 East Lake
Nowhere, TX 75555-4689

DS
Dear Mr. Gonzales:

DS
All of us at Playmor Gym Equipment are delighted that you chose to carry our gym equipment in your Sporting Goods store. Mary Hines, Area I sales representative, told me this morning how much she enjoyed meeting with you.

We believe you will be pleased with our products and that you will have many satisfied customers.

If I can be of any help to you in the future, please let me know.

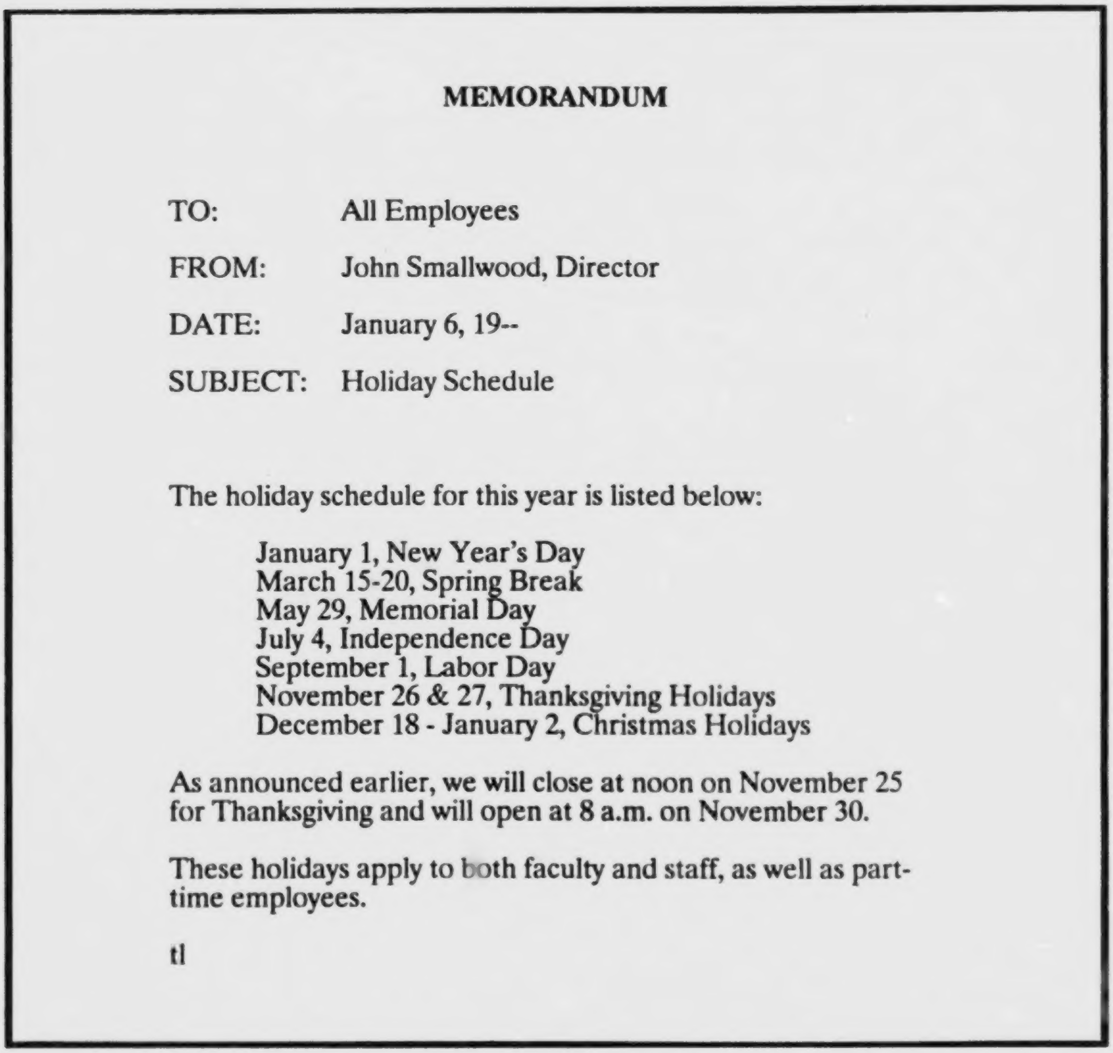
DS
Sincerely yours,

4 LINES

Dan Jones
President

DS
DJ/mlb

Memorandum Style 1



MEMORANDUM

TO: All Employees

FROM: John Smallwood, Director

DATE: January 6, 19--

SUBJECT: Holiday Schedule

The holiday schedule for this year is listed below:

January 1, New Year's Day
March 15-20, Spring Break
May 29, Memorial Day
July 4, Independence Day
September 1, Labor Day
November 26 & 27, Thanksgiving Holidays
December 18 - January 2, Christmas Holidays

As announced earlier, we will close at noon on November 25 for Thanksgiving and will open at 8 a.m. on November 30.

These holidays apply to both faculty and staff, as well as part-time employees.

tl

Memorandum Style 2

MEMORANDUM

January 6, 19--

To: All employees

John Smallwood
Director

Holiday Schedule

The holiday schedule for next year is listed below:

January 1, New Year's Day
March 15-20, Spring Break
May 29, Memorial Day
July 4, Independence Day
September 1, Labor Day
November 26 & 27, Thanksgiving Holidays
December 18 - January 2, Christmas Holidays

As announced earlier, we will close at noon on November 25 for Thanksgiving and will open at 8 a.m. on November 30.

These holidays apply to both faculty and staff, as well as part-time employees.

tl

Table

TRAVEL BUDGET BREAKDOWN

Employee	Miles	**Days**	**Amount**
Samuel Davidson	4,200	21	$1,480
Randee Evans	6,500	25	2,260
Tyler Ling	3,800	18	1,480
Jackie Rodriguez	3,600	18	1,440

ACTIVITY MATRIX

Activities	Domains			Basic Skills		
	Cognitive	Psycho-motor	Affective	Reading	Writing	Math
1 Project 1	X	X		X		X
Project 2	X	X		X	X	X
2 Projeact 1	X	X		X	X	X
Project 2	X	X		X	X	X
3 Project 1	X	X		X	X	X
Project 2	X	X		X	X	X
Project 3	X	X		X	X	X
Project 4	X	X		X	X	X

COMPETENCY TEST MATRIX

Parts	Domains			Basic Skills		
	Cognitive	Psycho-motor	Affective	Reading	Writing	Math
I	X			X		
II & III Project 1	X	X		X	X	X
Project 2	X	X		X	X	X
Project 3	X	X		X	X	X

Competency Test

PART I: TYPES OF DOCUMENTS

Classify each of the following documents into one of these categories:

A. Informal document
B. Business report
C. Business correspondence
D. Columnar report

_________ 1. A letter to a department store regarding an error in a customer's bill.

_________ 2. A notice that the supply room will be closed after 4 p.m.

_________ 3. A list of names, birthdays, and phone numbers of the organization's employees.

_________ 4. A document requesting additional information on a new computer.

_________ 5. An announcement, to be posted, about the company picnic.

_________ 6. A proposed budget for the production department for the next fiscal year.

_________ 7. A document that has footnotes and a bibliography.

_________ 8. A letter to a personnel manager, inquiring about job openings in his/her organization.

_________ 9. A document prepared quarterly, submitted to upper management describing the goals accomplished and those still to be achieved.

_________10. A price list of products to be sold in a fund raising project.

2-2 Document Production Procedures

Competency Test

PART II & III: FORMATTING AND EDITING MAILABLE DOCUMENTS

Project 1

Key in the following memo. Make formatting and editing changes according to your instructor's directions.

TO: All management

FROM: Raymond Driscoll

DATE: September, 1, 19xx

SUBJECT: Rental Car Rate Changes

We have recently renegotiated our annual car rental rates with Super-Ride. Effective immediately Super-Ride will continue to be our car rental supplier. The following are changes in the our agreement. They are the daily flat rates that include unlimited mileage.

Subcompact	$43
Compact	$44
Mid-size 2- and 4-door	$45
Full-size, 2-door	$46
Full-size, 4-door	$47

Please make these changes in you employee manual for future reference.

xx

Project 2

Key in the following letter in full-block, mixed punctuation style. Make formatting and editing changes according to the procedures provided by your instructor.

April 11, 19xx; Ms. Margaret Jenkins; Director of Placement; 5000 W. University; Southern Methodist University; Dallas, TX 75430; Dear Ms. Jenkins:

I very much enjoyed our visit at SMU. Your plan to have a placement day on February 25, 19xx, for the schools in your area sounds like a very exciting concept. As I stated, Southland Corp. would very much be interested in attending an event of this nature. I have asked Richard Gonzales to send you some brochures explaining about our corporation. We would be very happy to interview with any of your students that might be interested. We are interested in hiring entry level management personnel with a starting salary of $18,000 to $22,000 depending upon experience and qualifications. Liang Chang would also be able to answer any questions that you might have.

Thank you very much for your interest in Southland Corp. We are looking forward to interviewing some of your students this spring. Sincerely, Patricia Blackwell; PB/xx

Project 3

Key in the following report. Make formatting and editing changes according to the procedures provided by your instructor.

WHY YOU SHOULD SIGN UP FOR THE MEAL PLAN

Time

Time for study, work, knowledge and fun. We give you that time. We will save you time you would be spending shopping, cooking and cleaning up the kitchen.

Convenience

You are no longer at the mercy of the "unsupermarket." Avoid the long check-out lines, the no check cashing policy, the prices that never stay the same, loading and unloading, and perhaps the long heavy walk home.

Service

We are the campus food service and we like to cook and manage food so much that we have chosen to make a living at it. We love to cook, express ourselves, and be creative. Only we do it for a bunch of people.

Money Savings

Everybody likes to save money. Careful planning and wise investments can hedge inflation and the contract meal plan program is guaranteed to do that. You eat as much as you like and our price is guaranteed.

Unlimited Seconds

Our facility serves generous portions and unlimited seconds on almost everything.

Social Contact

Students are the most communicative people in the world, and we love it. We enjoy serving you and planning for you and your friends. Where else can you come to meet so many people? Here is where it's at. Action, fun, and good food!

Activity Answers

Activities 1-3

Answers will vary according to the word processor and computer system used. Evaluated to the satisfaction of the instructor.

Competency Test Answers

Part I

1. C
2. A
3 D
4. C
5. A
6. D
7. B
8. C
9. B
10. D

Part II - III Evaluated to the satisfaction of the instructor.

SECTION 2

Word Processing

Unit 1: Introduction

Unit Objective: Students will use terms common to word processing, identify the steps in the document cycle, be familiar with production features and commands of word processing software programs, and be able to move around documents, enter data, save information, and edit documents.

Student Competencies: After completing this unit, the student will be able to:

1. Use word processing terminology.
2. Describe the steps in the document cycle.
3. Categorize the production features of word processing software.
4. Demonstrate the ability to move around documents, enter data, save a file, and edit documents.

Focus: Terminology associated with word processing is becoming a part of everyday business vocabulary, and the features and capabilities of word processing software are becoming as well known as the typewriter keyboard was in the 1960s. Word processing has become synonymous with typewriting. It is a skill being used in all phases of business.

Terminology

Application	Use of word processing software, as in creating letters, reports, or mailing lists.
Backup	A duplicate file.
Block	A selected portion of text which can be operated upon as a unit.
Center	To balance text or headings between margins.
Copy	To reproduce a block within a document or in another document.
Cut and paste	To remove a block from one part of a document and place it in another location.
Delete	To erase characters from a document and close up the vacated space.
Draft	A rough, unedited copy.
Edit	Any additions, deletions, changes, re-spacing, or moving of text within a document.
Footer	A line of text repeated at the bottom of each page.
Format	Arrangement on a page, including margins, spacing, type size, tab stops, etc.
Hardcopy	Written, typed, or printed copy; a document.
Hanging paragraph	Indenting each line of a paragraph except the first line.
Header (running head)	A line of text which appears at the top of each page.
Hyphenation	A feature which permits dividing words at the end of a line, permitting a more even right margin.

Indent	To enlarge the margin for selected portions of the text.
Insert	To add characters within existing text and move the following portions to create the needed space.
Justify	Print with straight margins on both sides.
Margin	The specified amount of space to the left, right, top, and bottom of the text area.
Move	Changing the location of a block of text within a document.
Orphan	The last line of a paragraph which is printed at the top of a page after a page break.
Page break	A manual or automatic command to control when a new page will begin.
Pitch	The measure of type size (characters per inch).
Proportional spacing	Space that is adjusted according to the size of each character.
Ruler	A guide displayed on the screen of some word processors to assist in formatting.
Scrolling	Moving a portion of the text on screen into view.
Tab	A preset distance from the left margin to which the cursor can be moved with a single keystroke.
Typeover	A condition in which characters are replaced, rather than inserted, when typed into existing text.
Widow	The first line of a paragraph that is printed at the bottom of a page, before a page break.
Word wrap	A feature that sends text to the beginning of the next line when you type beyond the margin.

Unit Overview

Background

Word processing is the computerized replacement for typewriting. It is a universal skill application that can be applied to anything that formerly required a pen and paper. Using the capabilities of word processing software makes it easy to manipulate, edit, move, and print text to achieve the most visually appealing document.

The document cycle

☐ The document cycle is a sequence of steps that are normally followed in the processing and production of printed information.

- ▲ **Input**—information is read from source documents which can take many forms (handwritten, typed, extracted from several sources, or transferred from another document), and keyed into a computer using word processing software.
- ▲ **Processing**—editing, revising, combining, rearranging, formatting, or any combination of actions desired for a document to reach its completed form.
- ▲ **Output**—printing one or more copies of the completed document.
- ▲ **Distribution or communication of information**—circulating hard or electronic copy of documents through postal, hand delivered, or electronic mail.
- ▲ **Storage**—filing data in a database on a disk or as a hardcopy of a document. Recipients of copies of the document can also store the copies for later reference.
- ▲ **Retrieval**—electronically or manually obtaining a copy of an existing document. The electronic version of a document can quickly be retrieved when a copy of the document is needed.

Production features

A wide range of word processing software programs is currently available for all types of computers. The features vary greatly, but some features are common to all or most word processing programs.

☐ Word processing application features

- ▲ **Help function**—available by topic, function, or level, assists the user with the program operation. When the user gets "stuck," or does not know what to do next, on-screen help is available in a keystroke or at the click of a mouse button.

- ▲ **Spelling checker**—flags words not found in the dictionary. Sometimes it offers additional help by suggesting one or more possible substitutes. Words may be added to the dictionary to allow for specialized vocabularies or frequently used names.

- ▲ **Thesaurus**—provides the user with synonyms. A list of synonyms is displayed by pointing with the cursor to a word in the text and accessing the Thesaurus command. Words can be replaced or left unchanged.

- ▲ **Outlining feature**—enables writers to organize information. This feature permits the user to develop an outline and then expand it into a complete document by taking headings or key words from paragraphs or sub-paragraphs and forming an outline.

- ▲ **Conversion routine**—allows transporting text for access by other software packages.

- ▲ **Arithmetic functions**—allow mathematical calculations such as addition, subtraction, multiplication and division to be performed.

- ▲ **Sort routine**—permits arranging terms or sections of text into a desired sequence. This is useful for alphabetizing lists of names, glossary terms, or appendix items.

- ▲ **Indexing feature**—allows entries, including page numbers, to be identified that will later be organized into an index for the document. It is intended for use with long documents.

- ▲ **Search feature**—allows the user to search a document for a specific word, phrase, or format.

- ▲ **Search and replace feature**—allows the user to search a document for a specific word, phrase, or format and replace it with another.

- ▲ **Text enhancement features**—include those used for centering or indenting a block of text or using boldface, italics, and underline for emphasis. Some other text enhancement features include headers and footers, use of various fonts, and page numbering.

- ▲ **Automatic page breaks**—generally keep paragraphs together to eliminate orphans and widows.

☐ File functions

- ▲ **Creating a new file**—used when a new document is to be composed or entered.
- ▲ **Accessing an existing file**—used when retrieving an existing file that needs to be modified or another hardcopy is required.
- ▲ **Saving a file**—used before closing a file or during the entering process so that data is not lost.
- ▲ **Closing a file**—used when the user is finished with the file, such as after all data are keyed in, modifications are completed, or when ready to access another file.
- ▲ **Printing a file**—used to relay specific print options from the screen display to the printer; produces a hardcopy.
- ▲ **File management**—used to delete, rename, or print one or several files at the same time without leaving the program.
- ▲ **Exiting the program**—used to leave the program for an extended time period such as at the end of a day.

☐ Formatting options

- ▲ **Margins**—left, right, top, or bottom margins can be set for the entire document or paragraph by paragraph.
- ▲ **Line spacing**—allows the user to specify the spacing between lines.
- ▲ **Tab stops**—used to indent text and align columns and lists. The number and types of tab stops available varies with the software program. Left, right, center, and decimal tabs can be set in most programs.
- ▲ **Paragraph formats**—allow a paragraph to be indented in several formats. The paragraph can be formatted so that all lines of the paragraph are indented from the left margin, the right margin, the left and right margin, or centered.
- ▲ **Character formats**—include boldface, italic, underline, double underline, font types, font sizes, subscripts, superscripts, and strike through. Character formats can be used in combinations and can be attached to a character, word, paragraph, block of text, or to the entire document.
- ▲ **Right-justification**—space is added between the words in lines of text so that the right margin is even.
- ▲ **Headers and footers**—printed at the top and bottom of the page. When working with a multiple-page report, special information might be desired at the top and/or bottom of each page.

- ▲ **Page numbers**—some programs allow the operator to print page numbers on multiple documents. There are several options for their location, such as top or bottom of the page, left, right, center, or on even or odd pages,.

☐ Editing features

- ▲ **Insert and replace (overtype)**—adds or replaces text in existing documents. Using the insert mode allows characters to the right of new text to move to make room for it. Using the replace (overtype) mode, the text does not move, and the new text replaces the old.
- ▲ **Delete**—removes unwanted text from the existing document.
- ▲ **Block operations**—selects a section of text to attach formatting or to perform other functions such as deleting, centering, underlining, boldfacing, or copying a block on that section.
- ▲ **Move or cut/paste**—used when words, sentences, paragraphs, and entire pages of text are out of sequence. Identify text that is to be moved (cut and lifted) from its present location, and insert (paste) it into the new location.
- ▲ **Copy**—similar to cut-and-paste operation; however, the original version of the text is not affected by the changes.
- ▲ **Search and/or replace**—used to locate specific text or format and/or replace it with other text or format.

☐ Additional production features

- ▲ **Split screen**—allows the display of two or more sections of the same file or separate files on the screen at the same time, so they can be compared, moved, or copied.
- ▲ **Column mode**—allows work with columns as in a newsletter. The number of columns available for use will vary with software.
- ▲ **Macros**—short cuts used to record a series of keystrokes and then play back the series with a specific key code.
- ▲ **Style checkers**—used to check text for style and usage.
- ▲ **Automatic file backup**—used to save the most recent version of a document in the original file, and move the previously saved version to a backup file where it can be retrieved if necessary.
- ▲ **Automatic saving**—used to save files at specified intervals automatically. It prevents losing files of new or revised documents unintentionally when the user quits the program or in case of power failure.

Activities

ACTIVITY 1: WORD PROCESSING TERMINOLOGY WORKSHEET

Before starting to type a document, you will make some decisions about how the document will look. For example, you might choose the (1) ____________, or number of characters per inch the printer will use. If your hardware and software support it, you may use (2) ________________ ____________, which adjusts the space occupied by each character, according to its size. You might decide you want to (3) ____________ the (4) ____________, to make them straight on both sides. If your document is long, you might want a (5) ____________ to appear at the top of each page, or a (6) ______________ at the bottom of the page. You will probably want to (7) ______________ the headings between the margins. Sometimes the document has special sections with columns, so you will want to set (8) ________ to make it easier to jump to the right place. Of course, you will probably want to (9) ____________ the first line of each paragraph, or do just the opposite, use (10) _________________ ____________________________. To help with some of this (11) _________________ (arrangements on a page), some software displays a (12) ___________ as a guide at the top of the screen.

Once you start typing, you will probably need to do some (13) ______________ to correct errors or make changes. Usually you can insert characters within words, but sometimes you can choose to (14) __________________ instead, so that characters are replaced. If extra characters need to be (15) _________________ without leaving a space, that can be done too. If you decide you want to (16) ____________ a (17) ____________ of text from one part of the document to another, you can (18) ________ ______ ______________very conveniently. You can also (19) ___________ text if you need it to appear in more than one place.

Word processing programs do many things for you automatically. Some of them even permit dividing of words at the end of a line by (20) ____________________. They will keep you from creating (21) ____________ and (22) ________________, leaving one line of a paragraph stranded at the top or bottom of a page. Documents that are longer than one page will look good because the (23) ________ ___________ feature will control where a new page begins.

Activities

ACTIVITY 2: DOCUMENT CYCLE

Working in pairs, choose two of the following document examples and using the form provided by your instructor, describe what might occur during each of the six steps in the document cycle.

1. Each year, a charitable organization sends out personalized letters asking for donations of money to people on its mailing list, and follows up after 30 days with another letter for those who have not responded. The organization will send an immediate response when a donation is received.

2. A high school sends out failure notice letters to the parents of each student who fails one or more courses at the end of a six weeks period. A copy is kept on file, and if the student is still failing the next six weeks, another letter is sent with an additional paragraph at the end.

3. Mr. Jackson has called to complain about the service he received on an appliance. The sales manager writes a response, with a copy to the service department. Six weeks later, Mr. Jackson responds and writes that the problem is now corrected.

ACTIVITY 3: PRODUCTION FEATURES

Using your word processing program, describe three examples for each of the following common production features.

Word processing application features

1.

2.

3.

File functions

1.

2.

3.

Formatting options

1.

2.

3.

Editing features

1.

2.

3.

Additional production features

1.

2.

3.

ACTIVITY 4: BASIC DOCUMENT PRODUCTION

Project 1

Write the commands for your word processing program on the worksheet your instructor provides.

Project 2

Key in the following paragraph and save it under KINDER1. Print out a hardcopy.

All I Really Need To

Know I Learned in Kindergarten

Most of what I really need to know about how to live and what to do and how to be I learned in kindergarten. Wisdom was not at the top of the graduate-school mountain, but there in the sandpile at Sunday School.

These are the things I learned:

Share everything. Play fair. Don't hit people. Put things back where you found them. Clean up your own mess. Don't take things that aren't yours. Say you're sorry when you hurt somebody. Wash your hands before you eat. Flush. Warm cookies and cold milk are good for you. Live a balanced life—learn some and think some and think some and draw and paint and sing and dance and play and work every day some. Take a nap every afternoon. When you go out into the world, watch out for traffic, hold hands, and stick together. Be aware of wonder. Remember the little seed in the Styrofoam cup. The roots go down and the plant goes up and nobody really knows how or why, but we are all like that. Goldfish and hamsters and white mice and even the little seed in the Styrofoam cup—they all die. So do we. And then remember the Dick-and-Jane books and the first word you learned—the biggest word of all—LOOK.

—Robert Fulghum

Project 3

Following in the procedures your instructor provides, edit and format the document you did in *Project 2*. Make all corrections and format changes. Print a hardcopy for your instructor.

SECTION 2

Word Processing

Unit 2: Document Production Procedures

Unit Objective: Students will classify documents, format and edit documents using production features, and prepare mailable documents using at least one word processing software product.

Student Competencies: After completing this unit, the student will be able to:

1. Classify common documents by type.
2. Format and edit documents.
3. Prepare mailable documents using a word processing program.

Focus: The microcomputer has virtually replaced the typewriter as the dominant tool for producing individual documents. Without training and practice with appropriate software, you are not able to make use of the computer's vast capabilities. Many types of documents, at one time only created by professional typists, are now produced on microcomputers by persons of all ages and occupations.

Unit Overview

Types of documents

☐ Business documents include a wide variety of types. The following types of documents are generally used in most businesses.

- ▲ **Informal letters** are composed of mostly text and have few formatting requirements. Examples include memos and intra-departmental correspondence.
- ▲ **Business correspondence** usually follows a prescribed letter format. Most organizations have standards for margins, punctuation, salutations, and other details which all employees are expected to follow.
- ▲ **Business reports** might consist of single or multiple pages. They can include page numbers, footnotes or other notation formats, bibliographies, abstracts, etc.
- ▲ **Columnar reports** include anything with multiple columns. Reports that present numeric or statistical information are usually set up as columnar reports. Examples include schedules, inventory lists, and financial reports.

Business document formats

☐ Memorandums

- ▲ Parts of a memorandum
    - The **dateline** contains the current date.
    - The **recipient** is the person or persons who will receive the memo.
    - The **sender** is the person who prepared the memo.
    - The **subject line** identifies the purpose of the memo.
    - The **body** is the message of the memo.
    - The **reference initials** identify the person who initiated the memo and the person who keyed in the memo. Some offices identify only the person who keyed in the memo.

- The **enclosure** or **attachment notation** is used if something is to accompany the memo.
- The **carbon copy** or **photocopy notation** indicates who else is to receive a copy of the memo.

▲ Memorandum format

- The top margin on plain paper should be 1.5". On letterhead, begin 1" below the last line of the letterhead.
- The side margins on a preprinted form should be set even with the guide words on the left and the right margin should be equal in space to the left margin. On letterhead or plain paper, use 1.25" margins (a 6" line).
- The guide words should be keyed in at the left margin in all caps and double-spaced. A tab should be set two spaces after the colon in the longest guide word to align heading information.
- A new method can be used to save time. The guide words, DATE, FROM, and SUBJECT can be omitted, but the guide word TO must remain. The information normally keyed in after the keywords are keyed in at the left margin.
- The body begins two lines down from the last guide word. The body of the memo is single-spaced with double-spaces between paragraphs. Memos are usually keyed in block style but indented paragraphs may be used.
- The reference initials are keyed in at the left margin a double space below the last paragraph. A colon or a diagonal line separates the two sets of initials.
- The enclosure or attachment notation follows a blank line below the reference initials.
- The carbon copy (cc) or photo copy (pc) notation is placed leaving a blank line below the reference initial or enclosure notation.

☐ Business letters

▲ Basic parts and placement

- The **letterhead** is a printed heading containing the name and address of the company.
- The **dateline** tells the person receiving the letter when the letter was entered.
- The **inside address** shows the name, title, and address of the person or company to whom the letter is written. It is keyed in 4 to 12 lines below the date depending on length of the letter.

- The **salutation** addresses a person or a company. Use the person's name if at all possible. When addressing a business, use Ladies and Gentlemen. It is placed one blank line below the inside address.
- The **body** of the letter tells the message. It begins one blank line below the salutation. The body is single-spaced with double-spacing between paragraphs.
- The **complimentary close** ends the letter in a friendly manner. It is keyed in one blank line below the last line of the body of the letter.
- The **signature line** includes the name and title of the writer of the letter. It is keyed in four lines below the complimentary close.
- The **reference line** identifies the word processor and writer of the letter. The initials are placed one blank line below the signature line at the left margin.

▲ Special parts of letters

- The **addressee notation** shows how mail is to be handled when received, such as PERSONAL or CONFIDENTIAL. The notation is placed before the inside address and followed by one blank line. It is usually keyed in all caps at the left margin. The same notation is also included on the envelope.
- The **mailing notation** is used to show the purchase of special postal services and provides directions for sorting and recording mail, such as CERTIFIED or REGISTERED MAIL. This notation is placed one blank line after the date and keyed in all caps at the left margin. It is also included on the envelope.
- The **attention line** is used when a letter is addressed to a company but directed to a person or department. It is placed a double space below the inside address at the left margin or may be keyed in below the company name on both the envelope and the letter. The attention line can be keyed in all caps or underlined in upper- and lower-case letters.
- The **subject line** is used as a title to the body of the letter. It is keyed in one blank line after the salutation at the left margin. This line can be keyed in all caps or in upper- and lower-case letter. Ref. or Re. may be used instead of the word SUBJECT.
- The **enclosure notation** is used if additional materials are included with the letter. It is keyed in one blank line below the reference initials. The word "enclosure" can be abbreviated. A number should be placed after Enc. if there is more than one enclosure.
- **Carbon copy (cc:)** or **photocopy (pc:) notation** is used to show other persons to whom copies of the letter have been sent. This notation is keyed in one blank line below the reference initials or enclosure

notations. The name of the person receiving the copy should be keyed in after the notation.

- ▲ Standard margins
  - The side margins for long letters are 1 inch.
  - The side margins for medium length letters are 1.5 inches.
  - The side margins for short letters are 2 inches.
  - The bottom margins on all pages should be at least 1 inch.
- ▲ Letter styles
  - **Block style** has all lines beginning at the left margin. This style is one of the more popular letter styles in business because it is easy to set up, which saves time.
  - **Modified block style** has all lines beginning at the left margin except for the dateline, the complimentary close, and the signature line which begin at the center of the page, and the first line of paragraphs, which are indented five spaces. This style is not used often because it is difficult to do on computers.
  - **AMS simplified style** is sponsored by the Administrative Management Society. The format characteristics include full-block to the left, the inside address begins on the fourth line below the date, no salutation, the subject line is in all capital letters two blank lines below the address, and the body of the letter begins two blank lines below the subject line.
- ▲ Punctuation styles
  - Open punctuation requires less time to enter. Punctuation is not used after the salutation and the complimentary close.
  - Mixed punctuation is most commonly used in business. A colon is placed after the salutation and a comma is placed after the complimentary close.

☐ Business reports

- ▲ When preparing to write a report, determine the problem or purpose of the report. Decide upon the range of the topic and how much information to include. Remember to restrict what is to be included. Consider who will be reading the report, and write to that audience. Collect facts and data from sources such as library research, interviewing, surveys, other reports, etc.
- ▲ Outline facts and ideas including an introduction, body, and conclusion/recommendations. Determine the method of approach appropriate for the topic.

▲ When writing the report, use the outline as an organizational guide. Use a clear, concise, and objective writing style. If the report is lengthy, prepare a table of contents that lists major headings/chapters and their beginning page numbers.

▲ Visual aids may help communicate information. Visual aids might include bar graphs, pie charts, statistical tables, maps, illustrations, etc. Document all the sources of information referred to in the report.

- Footnotes are references printed at the bottom of a page referring to specific portions of directly or indirectly quoted text on that same page.
- Endnotes are references listed at the end of the report referring to specific portions of directly or indirectly quoted text. Endnotes take the place of footnotes.
- A bibliography is a complete listing of reference sources used to prepare a report.

▲ Types of reports

- **Informal reports** are short reports in various formats. A memorandum is a short report in the form of a memo that is used for interoffice communication. A letter is a short report written in letter format to someone outside the company.
- **Formal reports** are usually longer than informal reports. The more parts that are included in a report, the more formal the report.

  Basic parts of a formal report

  - The title page, which includes the author's name, date, title of the report, and sometimes the identification of the reader.
  - The table of contents, which lists the headings and their beginning page numbers as well as the parts of the report which appear before and after the body.
  - The body, which presents facts and information and discusses the objective/problem.
  - The bibliography, which lists the references or sources used to prepare the report.

  Supplementary parts of a formal report

  - The title fly, which lists only the title of the report.
  - The letter of transmittal, which is a message from the author to the reader.
  - The letter of authorization, which is the message that assigns responsibility for writing the report to the author.

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- The synopsis, which is a summary of the report.
- Visual aids, which are illustrations, graphs, or charts, that help communicate information visually.
- The appendix, which provides additional (but not vital) information at the end of a report.

☐ Columnar reports

▲ Tables and charts parts and placement.

- The **margins** depend upon how the table is used. Tables are always centered horizontally on the page. Vertical pacement is left to the discretion of the document originator or company procedure.
- The **title** is centered and keyed in all caps. Leave one blank line between the main title and subtitle if there is one.
- The **column headings** begin two blank lines down from the title to begin. The headings are centered horizontally. The headings are keyed in upper- and lower-case letters and may be bold or underlined.
- The **body** of the table is one blank line from the column heading to begin the columns. The body of the table may be single- or double-spaced depending on the length of the table.

ACTIVITY 1: TYPES OF DOCUMENTS

Project 1

From your mail at home, magazines, or local businesses, collect a sample of each of the four types of business documents. Assemble them in a notebook and highlight their specific characteristics. Highlight, in another color, other unusual formatting techniques.

Project 2

Key in an exact copy of one of the sample documents you have collected. Make sure your instructor has approved your selection. Make any modifications specified by your instructor.

2-2 Document Production Procedures

Activities

ACTIVITY 2: FORMATTING AND EDITING DOCUMENTS

Project 1

Retrieve the document *KINDER1* from Unit 1. Follow the instructions provided by your instructor to reformat and edit the document. Print a hardcopy and give it to your instructor.

Project 2

Enter the document provided by your instructor, print a hardcopy to edit, and then perform the format changes specified on the instruction sheet.

ACTIVITY 3: PRODUCING MAILABLE DOCUMENTS

Project 1

Key in the memo provided by your instructor. Format the memo using both memo styles. Print a hardcopy of each to submit to your instructor. Edit and format the documents according to the procedures provided by your instructor. Give your final hardcopies to your instructor.

Project 2

Key in the letter provided by your instructor. Format the letter using the three letter styles, and print a hard copy of each to submit to your instructor. Edit and format the documents according to the procedures provided by your instructor. Give your final hardcopies to your instructor.

Project 3

Key in the table provided by your instructor. Perform all editing and formatting instructions provided by your instructor.

Project 4

Key in the following report. Edit and format the document according to the instructions provided by your instructor.

LEADERSHIP DEVELOPMENT

Leadership is the ability to guide others toward accomplishing a common goal. Leadership, however, is a whole series of qualities which must be developed, used, and improved if one is to attain a level of achievement. How does one encourage leadership qualities in others? Simply, by providing opportunities for the practice of the following qualities.

Through the examination of each quality, we can gain a perspective on what to expect of others.

Initiative

Initiative is the ability to strive toward a goal. One must be able to evaluate all factors involved, establish a goal, and develop the methods or steps through which one would achieve that goal. Is initiative inborn or must it be developed? A leader demonstrates initiative through his/her performance as measured by the overall goals of his/her program.

Well-informed

A leader must be informed. Being informed does not mean that the leader is aware of only those positions, ideas, and concepts he/she accepts, but is aware of all positions, ideas, and concepts that will influence a situation. A leader demonstrates this ability to stay informed through researching each approach to a goal or problem, and by listening to others' opinions and solutions.

Enthusiasm and optimism

The traits of enthusiasm and optimism belong together. An enthusiastic person demonstrates optimism. Enthusiasm is the excitement of feeling or fervor within that allows us to approach goals successfully and to spark that fervor within others. Optimism is positive thinking, the concept that one is going to be successful and will achieve goals.

Respected by others

A leader must be able to earn the respect of others, or there will be no followers. This respect, while earned, will be under continuous scrutiny. To earn respect, the leader must demonstrate each of the above qualities to prove that respect is due.

SECTION 3
Information Management

Essential Elements 75.87 (j)(3)

3. **Fundamental concepts and skills necessary for use of microcomputer-based storage, retrieval, manipulation, and reporting information, at least including use of database management software. The student will be provided opportunities to:**

   A. identify and use the terminology related to information management;

   B. demonstrate the operational procedures and techniques used in information management software;

   C. use microcomputer software to design databases, enter and manipulate information, and produce reports (including graphic display of summary reports); and

   D. conduct keyword database searches using logic operations such as AND, OR, and NOT.

Lesson Plan

Essential Elements: 75.87 (j)(3)(A)(B)
Allocated Time: 5/10 Hours

Unit Objective:	Students will be able to use appropriate concepts and terminology to discuss information management on microcomputers and demonstrate ablility to enter and manipulate data in a database.

Student Competencies: After completing this unit, the student will be able to:

1. Define terms related to information management.
2. Discuss the concepts of information management.
3. Explain the typical uses of microcomputer-based information management.
4. Enter and manipulate data in a database.

Focus:	Databases give access to information needed to reach important decisions. Having some basic knowledge about databases will help you obtain information quickly, increasing your productivity.
Domains:	Activities and competency tests provide learning experiences within the cognitive, psychomotor, or affective domains and are coded on the Activity and Competency Test Matrices.
Basic Skills:	Activities and competency tests reinforce the basic skills of reading, writing, and mathematics and are coded on the Activity and Competency Test Matrices.

3-1 Introduction to Information Management

Content Outline

Concepts of information management

Information management defined
Database defined
Database applications
Reason for using databases
Advantages and disadvantages of database management

Database management system (DBMS)

DBMS defined

Database capabilities and usage

Capabilities
Using a database

Teacher Activities

Teacher Preparation

☐ Preview the unit.
☐ Review unit objectives.
☐ Make instructional analysis.
☐ Assess student learning needs.
☐ Decide on lesson domain: cognitive, psychomotor, or affective domain.
☐ Select instructional materials based on instructional analysis and student learning needs.
☐ Select instructional strategies based on lesson content and student learning needs.
☐ Prepare lesson plans from the unit lesson.
☐ Prepare additional instructional material.
☐ Reserve necessary media and equipment.

Teacher Presentation

☐ Present student objectives.
☐ Establish rapport with students.
☐ Review lesson objectives with students.
☐ Relate lesson to prior or future learning.
☐ When appropriate, encourage student interaction through questioning, discussions, or some other strategy.
☐ Emphasize the value/importance of the unit or activity.
☐ Allow time for closure of a lesson.

Reteach Activities

☐ Identify area(s) of weakness from results of evaluation.
☐ Select unit activities not previously used.
☐ Use additional resources and/or create materials based on student learning needs.
☐ Use a different teaching strategy in reteaching.
☐ Retest.

Specific Teaching Activities

☐ Become familiar with information management software.

☐ Discuss the terminology. Some terms will not be introduced until the next unit.

☐ Prepare transparencies to illustrate the command categories that are used with your specific database.

☐ Develop a list of database examples interesting to students.

☐ Make printouts and/or transparencies of sample databases.

☐ Identify reference manual sections useful to the students.

☐ Select exercises and drills from resources to complete the section.

☐ Duplicate data diskettes, with predesigned formats, for exercises.

☐ Read through the simulation for this section which is *High Tech Video Corporation* for use after the completion of unit 2. When reading through the simulation, be aware of the activities the students will be performing. Be sure to cover information required to perform the simulation.

☐ Remember to use the *Test Builder Program* and the related Test Bank. Refer to Appendix D for the *MAP Test Bank* question revisions for Section 3, Unit 1.

Activity 4 Provide the students with a template that already has headings entered and fields defined. Have the students sort and print the database in several ways.

Competency Test

Part IV Students will be retrieving their database for Activity 4. Provide additional records for the students to enter. Have the students sort and print the database in several ways.

ACTIVITY MATRIX

Activities	Domains			Basic Skills		
	Cognitive	Psycho-motor	Affective	Reading	Writing	Math
1	X			X	X	
2 Project 1	X				X	
Project 2	X				X	
Project 3	X				X	
Project 4	X				X	
3	X				X	
4	X	X		X	X	

COMPETENCY TEST MATRIX

Parts	Domains			Basic Skills		
	Cognitive	Psycho-motor	Affective	Reading	Writing	Math
I	X				X	
II Project 1	X				X	
Project 2	X				X	
III	X				X	
IV	X	X		X	X	

Competency Test

PART I: TERMINOLOGY

In your own words, define each of the following.

1. File
2. Field
3. Database
4. Record
5. Truncate
6. Alphanumeric
7. Find
8. Relational expressions
9. Logical expressions
10. Criteria

3-1 Introduction to Information Management

Competency Test

PART II: CONCEPTS OF INFORMATION MANAGEMENT

Project 1

List three applications for a database.

1.

2.

3.

Project 2

List three advantages and three disadvantages of a database.

Advantages

1.

2.

3.

Disadvantages

1.

2.

3.

Competency Test

PART III: DATABASE CAPABILITIES

Discuss three capabilities of your specific database software.

1.

2.

3.

3-1 Introduction to Information Management

Competency Test

PART IV: ENTERING AND MANIPULATING DATA

Retrieve the database you entered in *Activity 4*. Add the new records provided by your instructor. Sort the data and then print each copy according to the instruction sheet provided by your instructor.

Activity Answers

Activity 1

```
 FIND
 I
 L                 I
RELATIONALEXPRESSION
  O                D
  G    APPENDING   E
 FIELD L         D X
  C    P  CRITERIA
  A  D H  R      T
  L  E A  E      A
QUERYLANGUAGE   DBMS
  X  E U  T      A E
  P  T M KEY     S A
SORT E E         E R
E E    RECORD      C
L S    I           H
E S    C
C I
T O
  N
```

Activity 2

Project 1 Evaluated to the satisfaction of the instructor. The following can be used as a guideline.

Information management is organizing and managing the creation, security, usage, storage, and final distribution of business documents. The elements of a database are:

1. Field—a piece of information in a record, such as name, phone, etc.
2. Record—a group of fields for one individual.
3. File—a group of records with some element in common.

Project 2 Any five of the following typical database applications:

1. Accounting—inventory, payroll, invoicing, general ledger, accounts payable, and accounts receivable.

2. Personal—personal planning, scheduling, income tax, and personal finance.

3. Construction—estimating, job costing, bid management, and project management.

4. Financial—inventory control, lease management, financial reports, and cash management.

5. Medical—dental and doctor office, hospital administration, nursing home management, and pharmacy management.

6. Real estate—property management, mobile park management, escrow accounting and property listings.

7. Sports—baseball, football, basketball statistics programs; racehorse handicaps; and drafting.

8. Miscellaneous—travel agency management, food service management, scientific computations, and many more applications.

Project 3 Databases were designed to decrease repetitive work and increase accuracy and efficiency of data management.

Project 4 Any four of the following advantages and any two of the following disadvantages.

Advantages

1. Data can be added, deleted, or changed without retyping or making messy corrections.

2. As new needs arise, the data are already there.

3. Updating of a record is only done once.

4. All occurrences of a record can be deleted at one time.

5. Managed correctly, the system is reliable.

6. Integrated files allow an overview of the user's business and improve access to data.

7. Centralized location of data allows better security.

8. Multiple users can work with the database from different locations.

Disadvantages

1. Errors, if not corrected, are perpetuated.

2. The owner of the data can lose control over it.
3. Only one user can access a file (for change) at one time.
4. Privacy can be compromised.

Activity 3 Evaluated to the satisfaction of the instructor. The following capabilities can be used as a guideline.

1. Adding or entering new records.
2. Updating or editing existing records.
3. Deleting records.
4. Sorting or arranging records.
5. Searching or indexing records.
6. Querying or inquiring.
7. Selecting data.

Activity 4 Evaluated to the satisfaction of the instructor.

Competency Test Answers

Part I

1. File—a set of related records stored together.
2. Field—a subdivision of a record. An item of data within a record.
3. Database—a collection of related factual information organized especially for rapid accessibility.
4. Record—one or more related items of data stored as a unit.

5. Truncate—to cut-off or drop an existing portion of data that does not fit into the defined field.

6. Alphanumeric—data items which contain digits, letters, or special characters.

7. Find—same as a search; to look for all records that meet a set of criteria.

8. Relational expressions—generally used in a search; state the condition on which a record is to be retrieved.

9. Logical expressions—allow complex retrievals to be made through logical operators AND, OR, and NOT.

10. Criteria—the rules used for selecting records from the database.

Part II

Project 1 Any three of the following applications. (Others are acceptable.)

1. Accounting—inventory, payroll, invoicing, general ledger, accounts payable, and accounts receivable.

2. Personal—personal planning, scheduling, income tax, and personal finance.

3. Construction—estimating, job costing, bid management, and project management.

4. Financial—inventory control, lease management, financial reports, and cash management

5. Medical—dental and doctor office, hospital administration, nursing home management, and pharmacy management.

6. Real estate—property management, mobile park management, escrow accounting, and property listings.

7. Sports—baseball, football, basketball statistics programs; racehorse handicaps; and drafting.

8. Miscellaneous—travel agency management, food service management, scientific computations, and many more applications.

Project 2 Any three of the following advantages:

1. Data can be added, deleted, or changed without retyping or making messy corrections.
2. As new needs arise, the data are already there.
3. Updating of a record is only done once.
4. All occurrences of a record can be deleted at one time.
5. Managed correctly, the system is reliable.
6. Integrated files allow an overview of the user's business and improve access to data.
7. Centralized location of data allows better security.
8. Multiple users can work with the database from different locations.

Any three of the following disadvantages:

1. Errors, if not corrected, are perpetuated.
2. The owner of the data can lose control over it.
3. Only one user can access a file (for change) at one time.
4. Privacy can be compromised.

Part III Evaluated to satisfaction of the instructor.

Part IV Evaluated to satisfaction of the instructor.

Information Management Procedures 3-2

Lesson Plan

Essential Elements: 75.87 (j)(3)(B)(C)(D)
Allotted Time: 7.5/15 Hours

Unit objective: Students will perform data management activities to design and construct databases, manipulate data, and organize this information into reports.

Student competencies: After completing this unit, the student will be able to:

1. Design and construct a database.
2. Access information using search and sort commands with logical operations such as AND, OR, and NOT and relate commands to particular applications.
3. Prepare and print reports.

Focus: The ability to use database features to design, construct, and manipulate data to prepare reports enhances an employee's value.

Domains: Activities and competency tests provide learning experiences within the cognitive, psychomotor, or affective domains and are coded on the Activity and Competency Test Matrices.

Basic Skills: Activities and competency tests reinforce the basic skills of reading, writing, and mathematics and are coded on the Activity and Competency Test Matrices.

3-2 Information Management Procedures

Content Outline

Planning a database

Database structures
Planning the organization of the database

Designing/creating a database

Designing forms
Field formatting

Data entry/output

Data entry
Output

Teacher Activities

Teacher Preparation

☐ Preview the unit.
☐ Review unit objectives.
☐ Make instructional analysis.
☐ Assess student learning needs.
☐ Decide on lesson domain: cognitive, psychomotor, or affective domain.
☐ Select instructional materials based on instructional analysis and student learning needs.
☐ Select instructional strategies based on lesson content and student learning needs.
☐ Prepare lesson plans from the unit lesson.
☐ Prepare additional instructional material.
☐ Reserve necessary media and equipment.

Teacher Presentation

☐ Present student objectives.
☐ Establish rapport with students.
☐ Review lesson objectives with students.
☐ Relate lesson to prior or future learning.
☐ When appropriate, encourage student interaction through questioning, discussions, or some other strategy.
☐ Emphasize the value/importance of the unit or activity.
☐ Allow time for closure of a lesson.

Reteach Activities

☐ Identify area(s) of weakness from results of evaluation.
☐ Select unit activities not previously used.
☐ Use additional resources and/or create materials based on student learning needs.
☐ Use a different teaching strategy in reteaching.
☐ Retest.

Specific Teaching Activities

☐ Make printouts or transparencies of sample databases.

☐ Identify reference sections that will be useful to the students.

☐ Select exercises and drills from resources to complete the section.

☐ The simulation for this section is *High Tech Video Corporation*. You can use this as a culmination activity or test for the section or save it for the course closure. The simulation stresses word processing and editing. Refer to the special products pages located at the front of this book for additional simulations that can be used if this course is the only office education course taught at your school.

☐ Remember to use the *Test Builder Program* and the related Test Bank. Refer to Appendix D for the *MAP Test Bank* question revisions for Section 3, Unit 2.

Activity 1

Project 1 Copy the worksheet for the students to use as their instruction sheet. You might add other commands that are relevant to your software.

Project 3 If some of your students do not have a collection and they need something to use for this activity, you might obtain magazine listings from the library, items from the school office, or categorize your reference books.

Project 4 Obtain team lists from your school's athletic director. If your school is small, have the students enter all the athletes. If you're at a large school, have the students enter the athletes on just one particular team. Make the team lists available for your students to use in this activity.

Competency Test

Parts II & III The students will gather data from other students in your high school. After they have sorted and printed their database in alphabetical order, decide upon additional criteria for which the students will search their database.

Worksheet for Database Instructions

1. Load the program __________
2. Get on-screen help __________
3. Get out of trouble __________
4. Open a new record file __________
5. Retrieve an existing file __________
6. Define a new record file __________
7. Edit fields __________
8. Add records __________
9. List records __________
10. Display a specific record __________
11. Edit records __________
12. Search for a record __________
13. Delete records __________
14. Sort a file __________
15. Print a report __________
16. Quit the program __________
17. __________
18. __________
19. __________
20. __________

ACTIVITY MATRIX

Activities		Domains			Basic Skills		
		Cognitive	Psycho-motor	Affective	Reading	Writing	Math
1	Project 1	X				X	
	Project 2	X				X	
	Project 3	X	X		X	X	X
	Project 4	X	X		X	X	X
	Project 5	X	X		X	X	X
2 & 3	Project 1	X	X		X		X
	Project 2	X	X		X		X
	Project 3	X	X		X		X

COMPETENCY TEST MATRIX

Parts		Domains			Basic Skills		
		Cognitive	Psycho-motor	Affective	Reading	Writing	Math
I	Project 1	X				X	
	Project 2	X	X		X	X	X
II & III		X	X		X	X	X

Competency Test

PART I: DATABASE CONSTRUCTION

Project 1

Explain the differences in these database structures and identify the type you are using in the classroom.

Hierarchical

Network/Plex

Relational

Project 2

Survey at least 20 high school students who are not in your office class. Ask them to speculate where they will be in 20 years. Include address, occupation, marital status, children, etc. Create a form, enter your data, and use the database to compile information for a fictitious 20-year class reunion.

Competency Test

PARTS II-III: SEARCHING AND PRINTING REPORTS

Using the database created in Part I, Project 2, and instructions provided by your instructor, perform the following:

1. Arrange the students in alphabetical order by last name. Print a copy of your list.

2.

3.

Activity Answers

Activity 1

Projects 1-5 Evaluated to the satisfaction of the instructor.

Activities 2-3

Projects 1-3 Evaluated to the satisfaction of the instructor.

Competency Test Answers

Part I

Projects 1-2 Evaluated to the satisfaction of the instructor.

Parts II-III Evaluated to the satisfaction of the instructor.

SECTION 3

Information Management

Unit 1: Introduction

Unit Objective: Students will be able to use appropriate concepts and terminology to discuss information management on microcomputers and demonstrate ability to enter and manipulate data in a database.

Student Competencies: After completing this unit, the student will be able to:

1. Define terms related to information management.
2. Discuss the concepts of information management.
3. Explain the typical uses of microcomputer-based information management.
4. Enter and manipulate data in a database.

Focus: Databases give access to information needed to reach important decisions. Having some basic knowledge about databases will help you obtain information quickly, increasing your productivity.

Terminology

Alphanumeric	Data items that contain digits, letters, or special characters.
Appending	Adding records to an existing database file.
Create	Establishing the records and fields to be used in a database.
Criteria	The rules used for selecting records from the database.
Database	A collection of related factual information organized for rapid accessibility.
Database management system (DBMS)	The most sophisticated type of database program. Should be distinguished from a file manager or filing program.
Delete	To remove a record from a file.
Field	A subdivision of a record. An item of data within a record.
File	A set of related records stored together.
Find	See search.
Index	A value which points to or counts records in a file or list.
Key	A field or category within a record that is used to identify, select, or sort records.
Logical expressions	Allow complex retrievals to be made through logical operators AND, OR, and NOT.
Query language	A high-level, English-like language used with databases to make requests.
Record	One or more related items of data stored as a unit.

Relational expressions	Generally used in a search. State the condition on which a record is to be retrieved.
Search (Find)	To look for all records that meet a set of criteria.
Select	To choose records from a file according to rules or criteria.
Sort	To arrange records according to a sequence.
Truncate	To cut-off or drop an existing portion of data that does not fit into the defined field.

Concepts of information management

☐ Information management is organizing and managing the creation, security, usage, storage, and distribution of business documents.

☐ A database is a form of information management and consists of related files. The database should be designed so that related data is collected and organized in a useful manner. Data are not duplicated, so the database becomes as effective and efficient as possible. A database contains the following elements.

- **Field**—a piece of information in a record, such as name, phone, etc.
- **Record**—a group of fields for one individual.
- **File**—a group of records with some element in common.

☐ Database applications

- **Accounting**—inventory, payroll, invoicing, general ledger, accounts payable, and accounts receivable.
- **Personal**—personal planning, scheduling, income tax, and personal finance.
- **Construction**—estimating, job costing, bid management, and project management.
- **Financial**—inventory control, lease management, financial reports, and cash management.
- **Medical**—dental or medical office, hospital administration, nursing home management, and pharmacy management.
- **Real estate**—property management, mobile park management, escrow accounting, and property listings.
- **Sports**—baseball, football, basketball statistics programs; racehorse handicaps; and drafting.
- **Miscellaneous**—travel agency management, food service management, scientific computations, and many more applications.

☐ Reason for using databases

- ▲ Databases decrease repetitive work. Once data is entered, it does not need to be entered again. For example, if an employee's birth date is needed for several different reports by different departments within a company, each department can access the database rather than obtaining the information separately.

- ▲ Databases increase the accuracy and integrity of data. The more times data are entered, the greater the chances are that mistakes will occur. This is particularly true when large quantities of data are being entered. Other factors that contribute to inaccuracy are fatigue, distractions, stress, and carelessness. When data are entered and immediately verified, almost all data inaccuracies can be eliminated. If the data are not verified and they are wrong, the consequences can be very serious.

- ▲ Databases increase efficiency because results are obtained much faster. When data are entered only once, fewer intermediate steps are required to obtain results.

☐ Advantages and disadvantages of information management

- ▲ Advantages
  - Data can be added, deleted, or changed without retyping or making messy corrections.
  - As new needs arise, data are already accessible.
  - Updating of a record is only done once.
  - All occurrences of a record can be deleted at one time.
  - Managed correctly, the system is reliable.
  - Integrated files allow an overview of the user's business and improve access to data.
  - Centralized location of data allows better security.
  - Multiple users can work with the database from different locations.
- ▲ Disadvantages
  - Errors, if not corrected, are perpetuated.
  - The owner of the data can lose control over it.
  - Only one user can access a file (for change) at one time.
  - Privacy can be compromised.

Database Management System (DBMS)

- ☐ A DBMS uses multiple programs to provide software support for and control over the use of a database.
  - ▲ Logical and physical database design represents the structure of data from the viewpoint of the user. It interacts with software elements of the DBMS to control the physical organization and structure of data.
  - ▲ DBMS packages use a series of commands to access and process data items. When used together, these commands usually are called a query language.

Database capabilities and usage

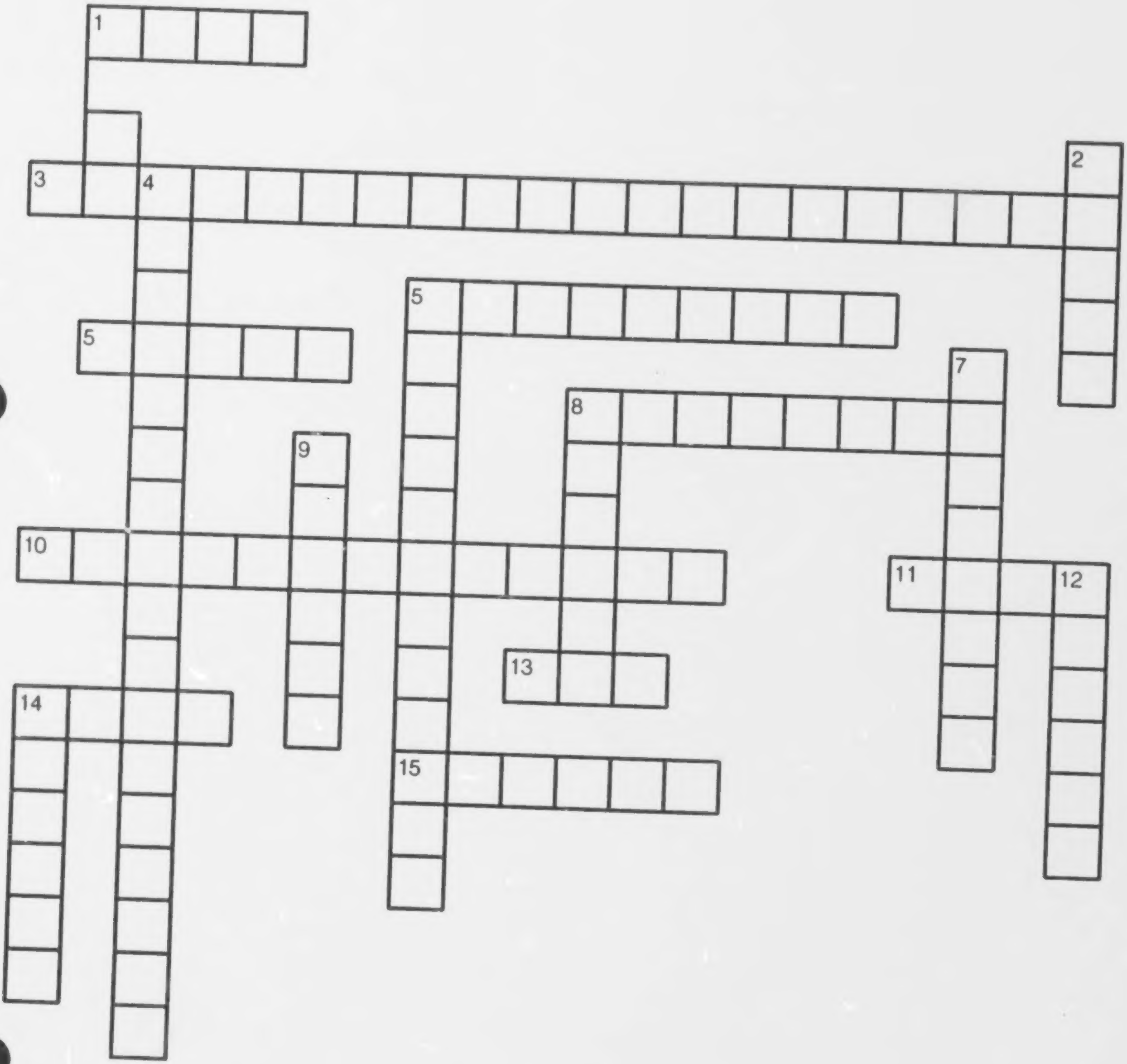
- ☐ Capabilities of a database include more than merely entering data, storing it, and then printing it out later.
  - ▲ **Adding or entering new records** keys data into a file through entries to a format or screen display. Some databases do not permit changing the structure once it has been established and data entered. All databases allow adding more records. Appending data to a file is one of the most frequent activities performed on a database.
  - ▲ **Updating or editing an existing record** alters records. The new information replaces the old or can be entered into an empty field. Information also can be removed from a field leaving an empty field.
  - ▲ **Deleting records** removes obsolete records. When a record is removed, its space is made available for new data, and its record number reassigned.
  - ▲ **Sorting or arranging records** organizes records within a file in a specific order or sequence. Once stored, the data usually remain in the same order. When a printed report is required, the data can be organized in any order, sequenced, and grouped by one or more fields.
  - ▲ **Searching or indexing records** creates an index that will locate records within a file. Using special function keys, the database can be searched to locate one or all occurrences of specified data.
  - ▲ **Querying or inquiring** finds a particular item of information. When the key field is entered, the data relevant to that record will be displayed on the screen.
  - ▲ **Selecting data** copies all or part of a record in a file into a working file, leaving the existing file undisturbed. The database might contain many thousands of records, but if the user is only interested in special criteria, that criteria can be selected without having to read every record.

☐ Using a database

- ▲ Entering or manipulating data is accomplished one record at a time, using an input form. Some software saves each record on a disk as soon as it is entered. Other programs do not save records until the user terminates the entry session. Any field of a record can be edited while the record remains on the screen.
    - The design of the input form or screen determines what data can be entered into a field. Some fields can be limited to alpha fields, some can be limited to numeric fields, and some can be alphanumeric. Error traps are built in. If the user attempts to key in invalid data, a message will be displayed. This feature does not catch all types of errors. Data will be accepted if the entries are longer than the fields. Most programs display an error message, others will truncate.
    - Once data have been entered, some databases will not allow changing the screen input form. If changes must be made, a new database can be created, and the records copied from the old database to the new.
    - To update files, the editing function changes records that are already a part of a file. The commands to do this vary among software. Obsolete records can be removed from the database by deleting them.
- ▲ Searching for specific records is accomplished through commands such as Find, Seek, or Locate. They may be used for retrieval or query of data.
    - The basic search procedure is to list the criteria that will identify the desired record(s) as part of the command. Three or more criteria can be listed. A search criterion can be exact or a range. If multiple criteria are required, they are joined with the logical operators AND, OR, or NOT.
    - The search can stop with the first record that meets the criteria or continue searching for all occurrences.
    - A relational expression generally is used in a search. A relational expression states the condition on which a record is to be retrieved. Relational operators include: equal to (=), not equal to (≠), greater than (>), less than (<), greater than or equal to (≥), and less than or equal to (≤).
- ▲ Output forms are used for reports.
    - Several output forms can be designed for the same database. The forms can be stored by name on a disk. If a new report is requested, a new report can be designed.
    - Only the desired fields are included on the form. The data records for the report are selected by searching, unless all records are to be printed.

- Printing produces a hardcopy of the report. Print is normally selected from a menu. Printer options may be selected earlier and saved with the form. Enter the name of the file to be printed, mount the correct forms on the printer, adjust the top of the form, and enter the command to start printing.

ACTIVITY 1: TERMINOLOGY CROSSWORD PUZZLE


1
2
3
4
5
5
7
8
9
10
11
12
13
14
15

ACTIVITY 1: CROSSWORD PUZZLE CLUES

ACROSS

1. Another word for search.
3. Generally used in a search; it states the condition(s) on which a record is to be retrieved.
5. Adding records to an existing database file.
6. A subdivision of a record; an item of data within a record.
8. The rules used for selecting records from the database.
10. A high-level, English-like language used with databases to make requests.
11. The most sophisticated type of database program, which should be distinguished from a file manager or filing program.
13. A field or category within a record that is used to identify, select, or sort records.
14. To arrange records according to a sequence.
15. One or more related items of data stored as a unit.

DOWN

1. A set of related records stored together.
2. A value that points to or counts records in a file or list.
4. Allows complex retrievals to be made through the use of words such as AND, OR, and NOT.
5. Data items that contain digits, letters, or special characters.
7. A collection of related factual information organized for rapid accessibility.
8. Establishing the records and fields to be used in a database.
9. To remove a record from a file.
12. To look for all records that meet a set of criteria.
14. To choose records from a file according to rules or criteria.

ACTIVITY 2: CONCEPTS OF INFORMATION MANAGEMENT

Project 1

Define information management and then list and explain the elements of a database.

Project 2

List five applications for which information management is used.

1.

2.

3.

4.

5.

ACTIVITY 2: (Continued)

Project 3

Discuss reasons for using a database.

Project 4

List four advantages and two disadvantages of using a database system.

Advantages

1.

2.

3.

4.

Disadvantages

1.

2.

ACTIVITY 3: DATABASE CAPABILITIES

List and explain four capabilities of the database you are using. Write the command that your database uses for each capability you explain.

1.

2.

3.

4.

Activities

ACTIVITY 4: ENTERING AND MANIPULATING DATA

Create a database with the following data. This database will be an appointment calendar. Follow the instructions provided by your instructor.

Date	Time	Contact Person	Subject
2-16	10 a.m.	Curt Jules	Insurance
3-18	4 p.m.	Jerry Donald	Concert
3-19	9 a.m.	Jerry Lynn	Company evaluation
2-16	3 p.m	Steven Scott	Additional staffing
2-17	7 p.m.	Donna Mae	Banquet
6-11	8 a.m.	Jim Dole	Equipment demo
2-16	1 p.m.	Daniel Pauley	New computer
2-20	11 a.m.	Angela Dawn	Employment
2-22	2 p.m.	Dr. Jim	Dr. appointment
2-20	12 p.m	Bill Lyon	Building addition

SECTION 3

Information Management

Unit 2: Information Management Procedures

Unit Objective: Students will perform data management activities to design and construct databases, manipulate data, and organize this information into reports.

Student Competencies: After completing this unit, the student will be able to:

1. Design and construct a database .
2. Access information using search and sort commands with logical operations such as AND, OR, and NOT and relate the commands to particular applications.
3. Prepare and print reports.

Focus: The ability to use database features to design, construct, and manipulate data to prepare reports enhances an employee's value.

Planning a database

Although a database is where data are kept, a system is needed to manage the data. Database management systems (DBMS) are programs specifically designed to manage data. DBMS programs have three types of structures.

☐ Database structures

- ▲ **Hierarchical or tree structure**—stores data in a top-down order according to predefined relationships. It is similar to a family tree.
    - All access begins at top-level items and proceeds downward. Fields must be accessed through a key field in a "parent" record. For example, if a business is organized by department, the only way to look at the record of an employee in a department is through the department parent record. The key field might be "employee name." Each employee record might, in turn, be a parent to another record, which could be accessed through the name as the key field.
    - The hierarchical structure accesses data faster than the other structures. However, this structure has limited ability to sort and rearrange data, and is the least flexible.
- ▲ **Network/plex structure**—similar to the hierarchical structure but access is possible at multiple levels.
    - Data are accessed through key fields, but rather than a single pathway, additional pathways can be used to access certain data. Data items can have both top-down and bottom-up relationships. For example, a person could be accessed using a social security number as a key in addition to being accessed through department name.
    - The network/plex structure allows some relationships to be made and has more flexibility than the hierarchical structure. However, it has slower access to data.
- ▲ **Relational structure**—traditional-type file that consists of records and fields.
    - This type of database is composed of tables of data, logically arranged in rows and columns. Several tables can be used within a database. Each table is built separately, but can have fields in common. The common fields can be used to relate data in one file to data in another. This allows a report to be made from data in two or more files.

- The relational structure is easy to adapt. It allows for more relationships and is the most flexible. However, it is the slowest of all the structures in accessing data.

☐ Planning the organization of the database

▲ Before creating a database, specific details must be planned and organized so the information ends up in an easy-to-use form.

Steps

- **Define the problem**—prepare a list of desired results. Describe each item. The description should cover all possible details.
- **Describe the flow of information**—draw a simple illustration of the work flow. This drawing can be used as a basis for changing the problem definition into a problem that can be solved by the computer.
- **Define the structure of the data**—identify each file name, data type, and the number of characters to be included in each field. The fields will make up the individual records.
- **Describe the input**—study the data in the source documents. Look at all copies or layouts of source documents before making a final decision of how the form will look.
- **Describe the process**—list the processes that will occur to a file or an input record. After creating the list decide whether or not the records will update files or become output.
- **Describe the output**—develop several possible output formats for the information. Reports and other output can be displayed on screen or printed.
- **Use test data**—valid data and data with errors should be used to decide whether the system is working properly. If the test data are designed properly, the valid transactions will test a system to its full capabilities and the invalid items will be rejected.

Designing/creating a database

Creating a database means to make space on the disk for data. Starting up a new database is usually accomplished through menu commands. The first job is to follow the instructions for creating the input form that has been designed. Output forms can be created at any time. Once the input form is complete, the program is ready for data entry.

- Designing forms
  - Input forms should be designed with the goal of making data entry as smooth and easy as possible. The program, the data, the paper size, and the printer all play a part in information management applications, and these components must be coordinated. The following should be considered.
    - **Source documents—**data to be keyed (usually paper documents). If good plans are made, entering from these source documents is easy for a data entry clerk. It's most helpful if the screen input form follows the same order as the source document. This minimizes eye movements and searching and thus speeds data entry, reduces mistakes, and lessens eye strain.
    - **Logical groupings—**it is easier to enter data if related fields follow one another on the form. Smooth movements from one field to the next lead to faster and more accurate data entry.
    - **Spacing—**the screen should be well balanced, not crowded or cluttered. Enough space should be left between fields for good visibility, but should not spread them out unnecessarily. The appearance of the form should be as pleasing as possible for the persons who must look at it for long periods.
    - **Prompts—**the words and other characters displayed on the screen should clearly state what data are expected, but should be brief. Use consistent abbreviations and punctuation.
    - **Software capabilities—**the software being used controls what options are available to the designer. Some packages give complete freedom of screen design, others give very little.

- Field Formatting
  - Both field name and data types must be specified during input design. Data can be classified into several types: alphanumeric and several numeric options, such as dollars and cents, percentage, fixed decimal, and date.

    Data Types

    - **Text field**—used to hold the characters A to Z, digits 0 to 9, and special characters such as ., %, -, @, #.
    - **Date field**—used to enter formal, calendar dates.
    - **Numeric field**—used to hold values, decimals, and calculating numbers.
  - The structure or characteristics of the data must be defined in terms of:
    - The name of the attribute (field or data item).

- The data type (alphabetic, numeric, or logical).
- The length of the data value (such as how many characters should be reserved for each attribute). The maximum number of characters should be reserved.

Data entry/output

☐ Data entry

▲ Once the structure has been sent through commands, such as CREATE, STORE, or DEFINE, most software packages will ask you to enter your data. Enter the data for each record, field by field.

▲ Most software provides a form onto which the data is to be entered. This form will appear on the screen and may state the attribute name, data type, and maximum length, as specified in the structure.

▲ After a database is set up, the first step is to select the database by name. Then follow the menu to bring up the input form or call for other activities. The program takes care of all recordkeeping and always knows how many records have been entered.

☐ Output

▲ Report forms—most reports are classified as either labels or lists.

- **Label**—a form that is designed to print data from an individual record. A label can be a single line of print or many lines. Many programs also allow the user to specify several labels to be printed side by side. The arrangement of data on the labels is entirely up to the user. Special forms are commonly used with database reports, particularly with label printing. Single width labels are called "one up," and quadruple width labels "four up."
- **List**—also called page format, this form consists of headings at the top of the page followed by a print line for each record. Fields are selected and arranged by the user. Many options are available, such as page length and width, printing of page numbers, and line spacing.

▲ Producing reports—information is selected, arranged to suit the purpose, and formatted into a report. Commands used for reporting information include REPORT, LIST, and PRINT.

ACTIVITY 1: DATABASE CONSTRUCTION

Project 1

Write the keystrokes that will cause the computer to complete the tasks on the worksheet provided by your instructor.

Project 2

List the characteristics of the database types.

Hierarchical

Network/Plex

Relational

Project 3

Construct a database to compile a specific collection that you own such as coins, stamps, CDs, video tapes, home inventory, etc. Use appropriate headings that will be useful to you. Determine the appropriate data field type and the correct space. Leave more space than is necessary so that additional information can be inserted.

Project 4

Construct a database that compiles the statistics for one of the school's athletic teams provided by your instructor. Be sure to include a field for eligibility and class standing. Include at least 10 records in your file.

Project 5

Using the seven steps for the creation of a database, gather information on several models of new cars. Include at least 10 records of cars with 2- and 4-door models in the price range of $8,000-$20,000.

ACTIVITIES 2-3: SEARCHING AND PRINTING REPORTS

Project 1

Using the database created in Activity 1, Project 3, arrange the items in alphabetical order. Print out your list.

Project 2

Using the athletic team database created in Activity 1, Project 4, perform the following:

1. Arrange the athletes' names in the database in alphabetical order. Print out your list.
2. Search for names of all the juniors on the team. Print a copy of your list.

Project 3

Using the new car database created in Activity 1, Project 5, perform the following:

1. Search for all models of cars under $12,000. Print a copy of your list.
2. Search for all 4-door cars. Print a copy of your list.

SECTION 4

Electronic Spreadsheets

Essential Elements 75.87 (j)(4)

4. **Fundamental concepts and skills necessary for use of microcomputer-based computation, analysis, planning, and reporting with numeric data, at least including use of electronic spreadsheets. The student will be provided opportunities to:**

   A. identify and use terminology related to electronic manipulation of numeric data;

   B. demonstrate the operational procedures and techniques used with microcomputer software for processing numeric data;

   C. use microcomputer software for computation, analysis, planning, and reporting (including graphic display) with numeric data; and

   D. apply electronic spreadsheet software both through use of prepared templates and with student-designed problem solutions.

Introduction to Spreadsheets 4-1

Lesson Plan

Essential Elements: 75.87 (j)(4)(A)(B)
Allocated Time: 5/10 Hours

Unit Objective: Students will identify terminology related to the use of spreadsheets; discuss purposes, uses, and components of a spreadsheet; and demonstrate skills necessary to enter data into a spreadsheet template.

Student Competencies: After completing this unit, the student will be able to:

1. Use terminology associated with popular spreadsheet programs.
2. Discuss the purposes and uses for the spreadsheet.
3. Describe the form and components of a spreadsheet.
4. Demonstrate functions and procedures available with most spreadsheet programs to enter data into a template.

Focus: No single software application program has had a greater impact in the offices of America than the electronic spreadsheet. Personnel in all areas are discovering ways to improve productivity with the help of a spreadsheet.

Domains: Activities and competency tests provide learning experiences within the cognitive, psychomotor, or affective domains and are coded on the Activity and Competency Test Matrices.

Basic Skills: Activities and competency tests reinforce the basic skills of reading, writing, and mathematics and are coded on the Activity and Competency Test Matrices.

4-1 Introduction to Spreadsheets

Content Outline

Spreadsheet usage

Spreadsheets
Using electronic spreadsheets in business

Spreadsheet forms and components

Spreadsheet features
Screen areas

Basic functions and procedures

Data entry

293

Teacher Activities

Teacher Preparation

- ☐ Preview the unit.
- ☐ Review unit objectives.
- ☐ Make instructional analysis.
- ☐ Assess student learning needs.
- ☐ Decide on lesson domain: cognitive, psychomotor, or affective domain.
- ☐ Select instructional materials based on instructional analysis and student learning needs.
- ☐ Select instructional strategies based on lesson content and student learning needs.
- ☐ Prepare lesson plans from the unit lesson.
- ☐ Prepare additional instructional material.
- ☐ Reserve necessary media and equipment.

Teacher Presentation

- ☐ Present student objectives.
- ☐ Establish rapport with students.
- ☐ Review lesson objectives with students.
- ☐ Relate lesson to prior or future learning.
- ☐ When appropriate, encourage student interaction through questioning, discussions, or some other strategy.
- ☐ Emphasize the value/importance of the unit or activity.
- ☐ Allow time for closure of a lesson.

Reteach Activities

- ☐ Identify area(s) of weakness from results of evaluation.
- ☐ Select unit activities not previously used.
- ☐ Use additional resources and/or create materials based on student learning needs.
- ☐ Use a different teaching strategy in reteaching.
- ☐ Retest.

Specific Teaching Activities

☐ Become familiar with various spreadsheet software packages.

☐ Obtain sample formats of manual worksheets, electronically produced worksheets, graphic representations, and spreadsheet software brochures.

☐ Prepare transparencies to illustrate the command categories common to your spreadsheet package.

☐ Prepare a list of spreadsheet examples to which students can relate.

☐ Make printouts and/or transparencies of sample spreadsheet screens.

☐ Identify reference manual sections that will be useful to the students.

☐ Set up printers for graphics.

☐ Remember to use the *Test Builder Program* and the related Test Bank. Refer to Appendix D for the *MAP Test Bank* question revisions for Section 4, Unit 1.

Activity 4

Project 1 Add additional commands to the worksheet on spreadsheet commands that you feel are necessary. Make copies for the students to use as a guide while you go over the commands or have them look up the commands in the references you provide.

Project 2 Create a template with headings of Name, 1st Qtr., 2nd Qtr., 3rd Qtr., and 4th Qtr. The students will enter the dollar sign. The next unit covers formatting. You may want to put a title on the spreadsheet such as Sales for 199x. Consider setting up a total column with the formulas entered. Using this method, you can check the totals to see if the correct numbers were entered. Duplicate the template or load it onto your network.

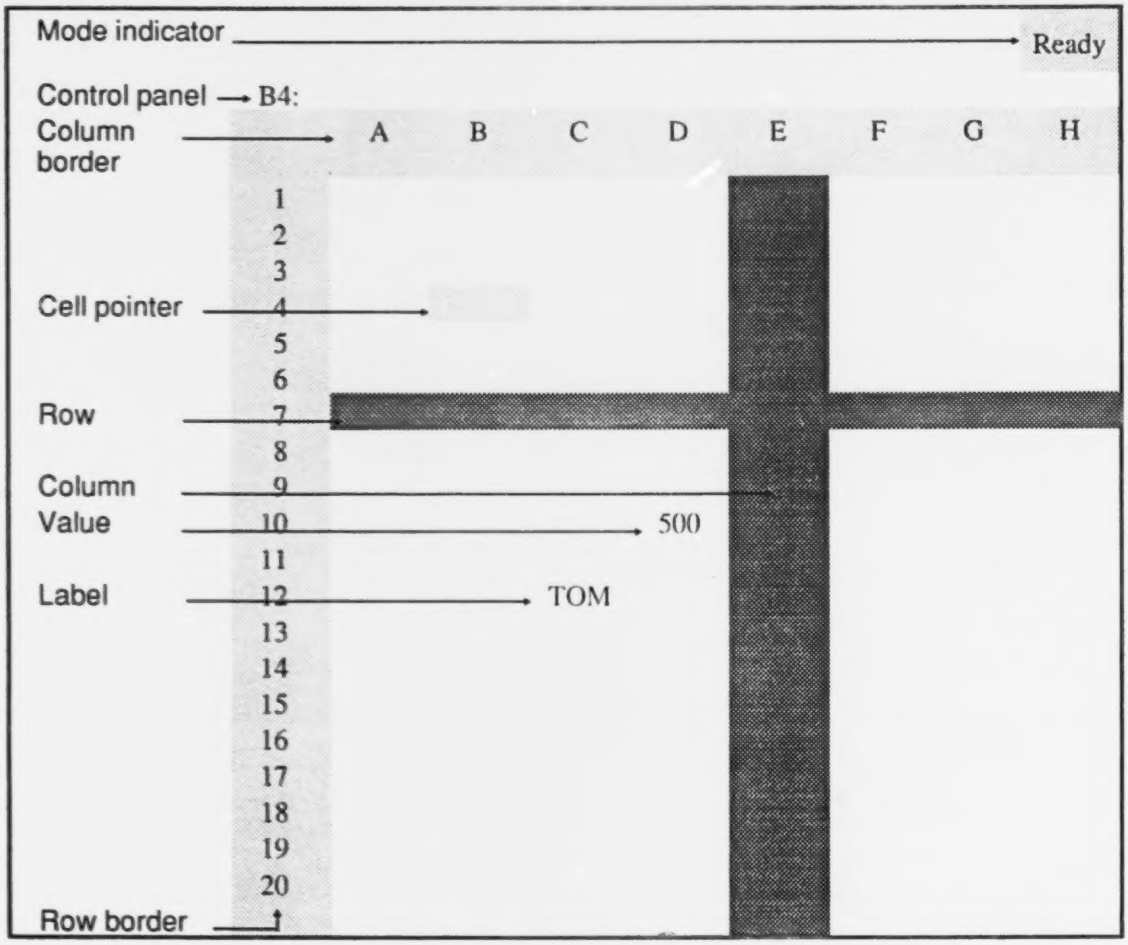
Competency Test

Part IV Create a template with headings of Name, Vehicle, Miles, and Expense. The students will enter the dollar sign. The next unit covers formatting. You may want to put a title on the spreadsheet such as Mileage for Month, 199x. Consider setting up a column with the formulas entered to find the cost per mile. Using this method, you can check this column to determine if the correct numbers were entered. Duplicate the template or load it onto your network.

Worksheet for Spreadsheet Commands

1. Up ____________________
2. Right ____________________
3. Left ____________________
4. Down ____________________
5. One page down ____________________
6. One page up ____________________
7. Lower-left corner ____________________
8. Specific cell (Example K49) ____________________
9. Screen right ____________________
10. Top left corner ____________________
11. End of the worksheet ____________________
12. Call for help ____________________
13. Retrieve a worksheet ____________________
14. Enter a label ____________________
15. Save a worksheet ____________________
16. Enter a number ____________________
17. Save a worksheet ____________________
18. Print a worksheet ____________________
19. Clear the worksheet ____________________
20. Quit the program ____________________
21. ____________________
22. ____________________

Spreadsheet


Mode indicator
Ready
Control panel
B4:
Column border
A
B
C
D
E
F
G
H
1
2
3
Cell pointer
4
5
6
Row
7
8
Column
9
Value
10
500
11
Label
12
TOM
13
14
15
16
17
18
19
20
Row border

ACTIVITY MATRIX

Activities	Domains			Basic Skills		
	Cognitive	Psycho-motor	Affective	Reading	Writing	Math
1	X			X	X	
2	X				X	
3	X	X			X	
4 Project 1	X				X	
Project 2	X				X	
Project 3	X				X	
Project 4	X	X		X	X	X

COMPETENCY TEST MATRIX

Parts	Domains			Basic Skills		
	Cognitive	Psycho-motor	Affective	Reading	Writing	Math
I	X			X	X	
II	X				X	
III Project 1	X				X	
Project 2	X				X	
IV	X	X		X	X	X

Introduction to Spreadsheets 4-1

Competency Test

PART I: TERMINOLOGY

Provide the appropriate term for each of the definitions below.

__________________ 1. To emphasize text on the screen by displaying it in inverse video, or in a color different from the display's regular color.

__________________ 2. A sequence of commands that is saved and can be executed much like a program.

__________________ 3. The kind of question that spreadsheets are designed to help answer.

__________________ 4. Another name for spreadsheets.

__________________ 5. A horizontal line of cells in the spreadsheet.

__________________ 6. The basic working unit of a spreadsheet; point at which a column and a row intersect; intersection of a row and a column.

__________________ 7. A line of vertical information labeled sequentially with identifying letters or numbers.

__________________ 8. A method of viewing sections of the worksheet when all sections cannot be seen at one time.

__________________ 9. A command used to control the way numbers are displayed on the screen.

__________________ 10. Column label followed by row label — example: A4.

__________________ 11. A computer program that displays a computerized organization of a columnar pad. A grid of rows and columns where text, numbers, and formulas can be stored and manipulated.

__________________ 12. Any alphanumeric entry on the spreadsheet.

__________________ 13. Displaying spreadsheet data values as a bar graph, line graph, or pie chart.

__________________ 14. Commands or formulas are completed by pointing to cells with the cursor, instead of keying in all the cell addresses.

4-1 Introduction to Spreadsheets

Competency Test

PART II: SPREADSHEET USES

Write a paragraph describing how a spreadsheet is used in business.

PART III: FORM AND COMPONENTS OF SPREADSHEETS

Project 1

Discuss three spreadsheet features available on your software program.

1.

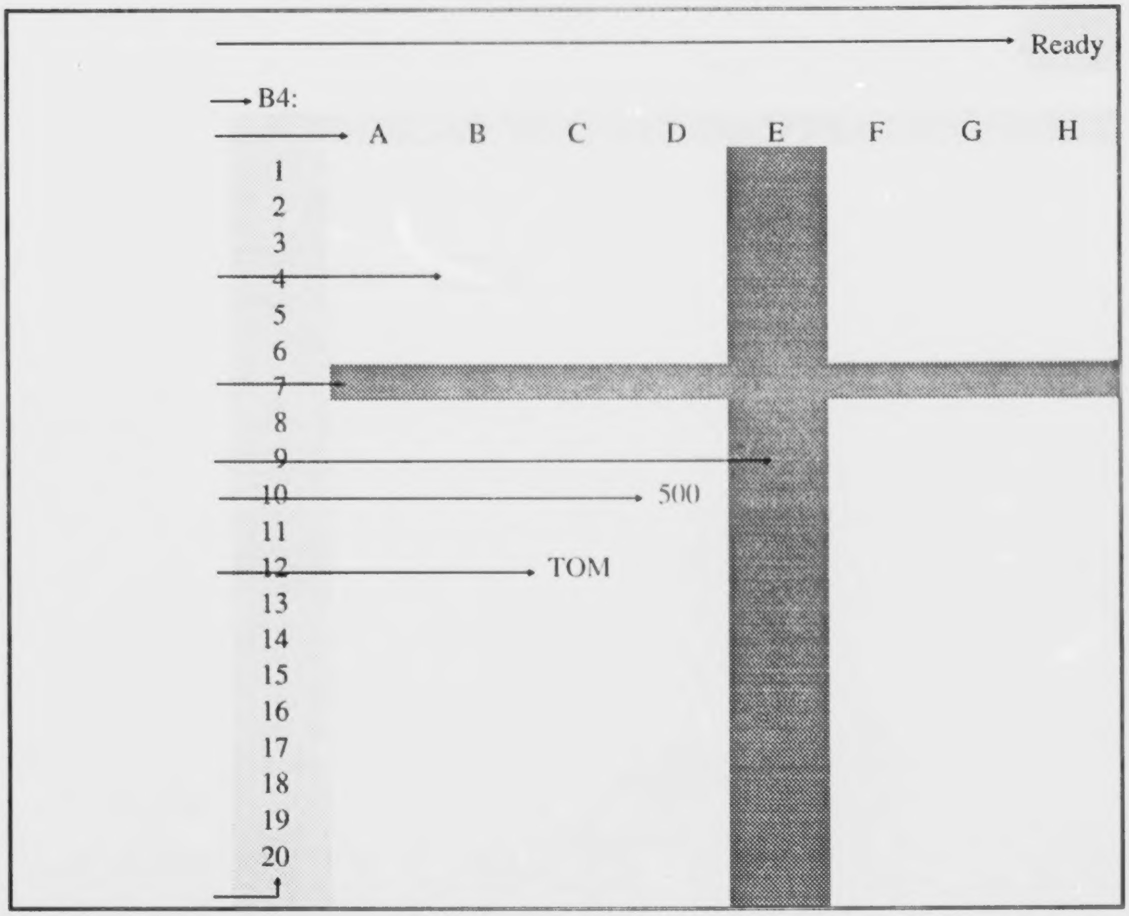
2.

3.

PART III: (Continued)

Project 2

Label the following parts of the spreadsheet.


Ready
B4:
A
B
C
D
E
F
G
H
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
500
TOM

PART IV: SPREADSHEET FUNCTIONS AND PROCEDURES

Using the spreadsheet template and information sheet provided by your instructor, key in the following data.

Name	Vehicle	Miles	Expense
Anderson, Pam	Cougar	598	$155.48
Bailey, Lisa	Cavalier	800	$208.00
Cotton, John	Cadillac	432	$112.32
Davidson, Joey	Blazer	876	$227.76
Getty, Bill	Escort	932	$242.32

Activity Answers

Activity 1

```
                S C R O L L
                    O
      B             W           L     M
  C E L L A D D R E S S       M A C R O
  E   O           N         W   B     D
  L   C   P O I N T I N G M O D E     E
  L   K           R         R   L
  P         V     Y         K
F O R M U L A S   M         S     H
  I         L     O C     W H A T I F
  N         U     D O       E     G
  T         E   C E L L     E     H
  E         S       U       T     L
  R A N G E         M             I
                    N             G
                                  H
                                  T
```

Activity 2 Evaluated to the satisfaction of the instructor.

Activity 3 Evaluated to the satisfaction of the instructor.

Activity 4

Projects 1-4 Evaluated to the satisfaction of the instructor. Answers will vary according to the computer and software used.

Competency Test Answers

Part I

1. Highlights
2. Macro
3. What if
4. Worksheet
5. Rows
6. Cell
7. Column
8. Scroll
9. Format
10. Cell address
11. Electronic spreadsheet
12. Label
13. Graphics
14. Pointing mode

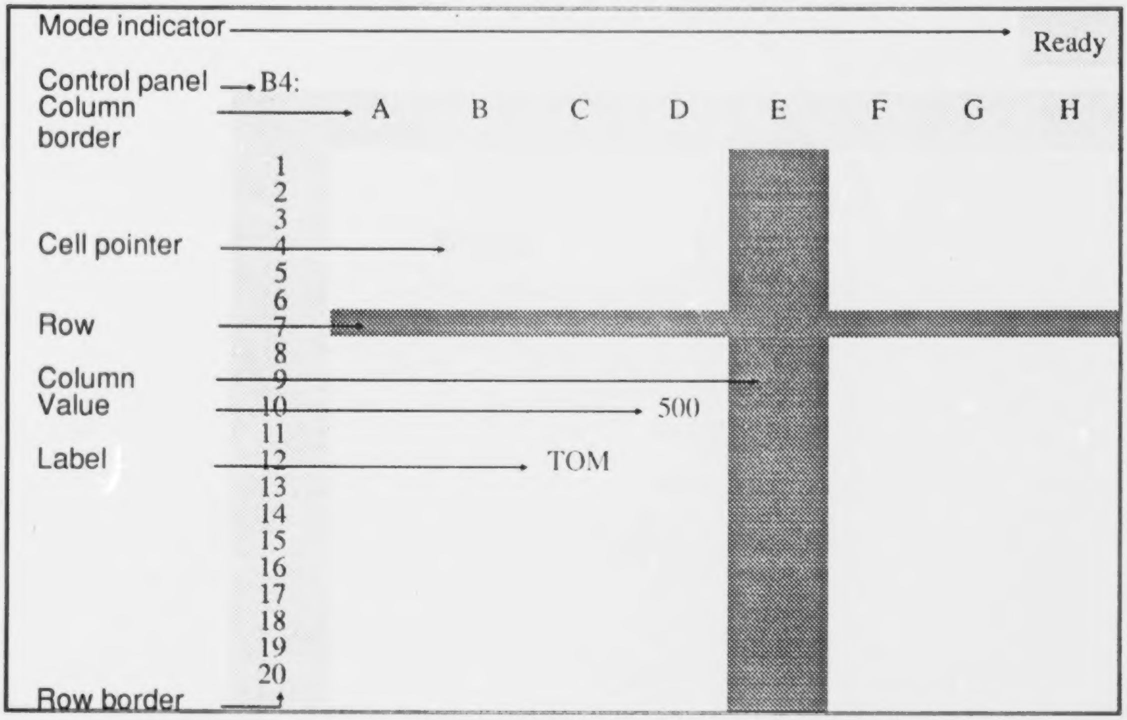
Part II

Evaluated to the satisfaction of the instructor.

Part III

Project 1 Evaluated to the satisfaction of the instructor.

Project 2


Mode indicator
Ready
Control panel
B4:
Column border
A
B
C
D
E
F
G
H
1
2
3
Cell pointer
4
5
6
Row
7
8
Column
9
Value
10
500
11
Label
12
TOM
13
14
15
16
17
18
19
20
Row border

Lesson Plan

Essential Elements: 75.87 (j)(4)(B)(C)(D)
Allocated Time: 7.5/15 Hours

Unit Objective: Students will use a spreadsheet program to design and construct the solution to a problem and report the results both in tabular and graphical form.

Student Competencies: After completing this unit, the student will be able to:

1. Retrieve and modify data in an electronic spreadsheet and carry out the necessary steps to report the results.
2. Analyze a simple problem that is appropriate for spreadsheet solution, and design a template that can be used to solve the problem.
3. Report the results of processing with an electronic spreadsheet in both tabular and graphic form.

Focus: Once you are familiar with and have had some practice with the command structure of spreadsheet software, problem solving activities can be performed quickly and easily. The ability to use problem-solving techniques increases employability.

Domains: Activities and competency tests provide learning experiences within the cognitive, psychomotor, or affective domains and are coded on the Activity and Competency Test Matrices.

Basic Skills: Activities and competency tests reinforce the basic skills of reading, writing, and mathematics and are coded on the Activity and Competency Test Matrices.

4-2 Spreadsheet Procedures

Content Outline

Designing spreadsheets

Steps in designing a spreadsheet

Using the spreadsheet

Entering and editing data
Formatting the worksheet
Built-in functions

Printing

Reports
Graphic reports

Spreadsheet Procedures 4-2

Teacher Activities

Teacher Preparation

☐ Preview the unit.
☐ Review unit objectives.
☐ Make instructional analysis.
☐ Assess student learning needs.
☐ Decide on lesson domain: cognitive, psychomotor, or affective domain.
☐ Select instructional materials based on instructional analysis and student learning needs.
☐ Select instructional strategies based on lesson content and student learning needs.
☐ Prepare lesson plans from the unit lesson.
☐ Prepare additional instructional material.
☐ Reserve necessary media and equipment.

Teacher Presentation

☐ Present student objectives.
☐ Establish rapport with students.
☐ Review lesson objectives with students.
☐ Relate lesson to prior or future learning.
☐ When appropriate, encourage student interaction through questioning, discussions, or some other strategy.
☐ Emphasize the value/importance of the unit or activity.
☐ Allow time for closure of a lesson.

Reteach Activities

☐ Identify area(s) of weakness from results of evaluation.
☐ Select unit activities not previously used.
☐ Use additional resources and/or create materials based on student learning needs.
☐ Use a different teaching strategy in reteaching.
☐ Retest.

Specific Teaching Activities

☐ Make printout and/or transparencies of sample spreadsheets.

☐ Identify reference manual sections useful to the students.

☐ The simulation for this section is *Happy Hammer Home Builders*. You can use this as a culmination activity or test for the section or save it for the course closure. The simulation stresses spreadsheet activities. Refer to the special products pages located at the front of this book for additional simulations that can be used if this course is the only office education course taught at your school.

☐ Remember to use the *Test Builder Program* and the related Test Bank. Refer to Appendix D for the *MAP Test Bank* question revisions for Section 4, Unit 2.

Activity 1

The students are to use the spreadsheet they created in Unit 1, Activity 4, Project 4. Provide the students with instructions and data to change their existing spreadsheet.

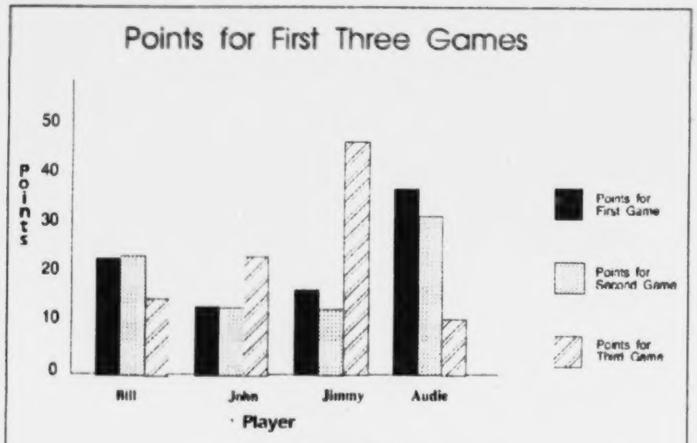
Activity 2

Project 1 Obtain textbook or similar information from the administration. You will need to locate course title, the book name, the publisher, how many are currently on hand, and the cost of the book. Make this list available to the students.

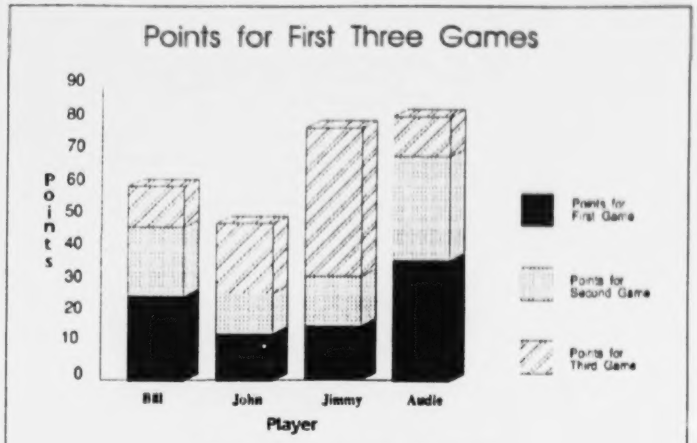
Project 2 You may need to help the students with the formulas, but they should at least try to solve the problem first. You may wish to create groups to perform this activity. The markup formula is .35 x cost per unit. The formula for the selling price is markup + cost per unit.

Competency Test

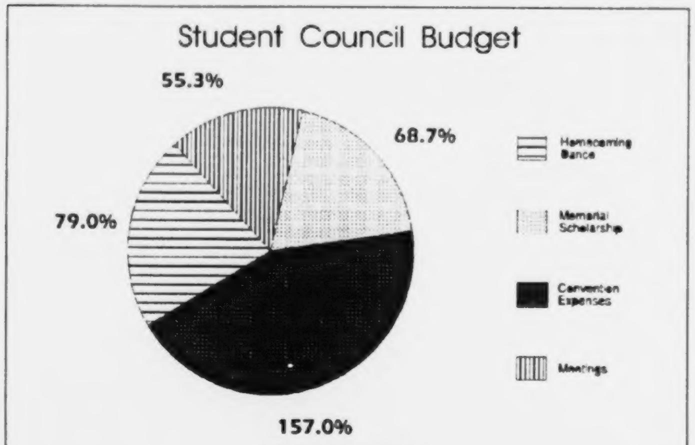
Provide the students with instructions on which graphs and reports they are to print. You might supply data to modify the original spreadsheet.



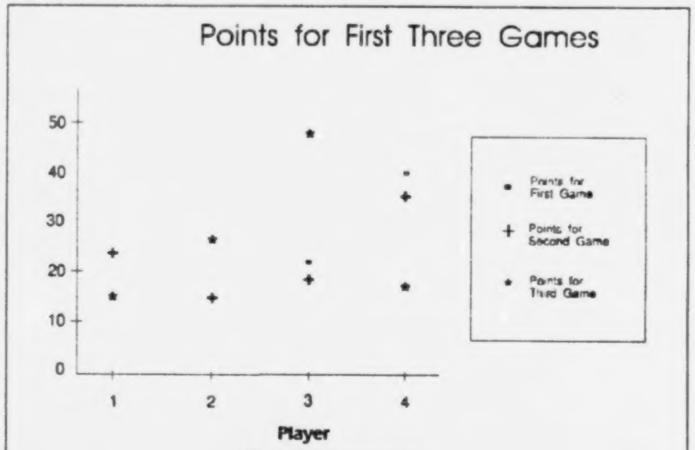
Bar Graph



Stacked Bar Graph

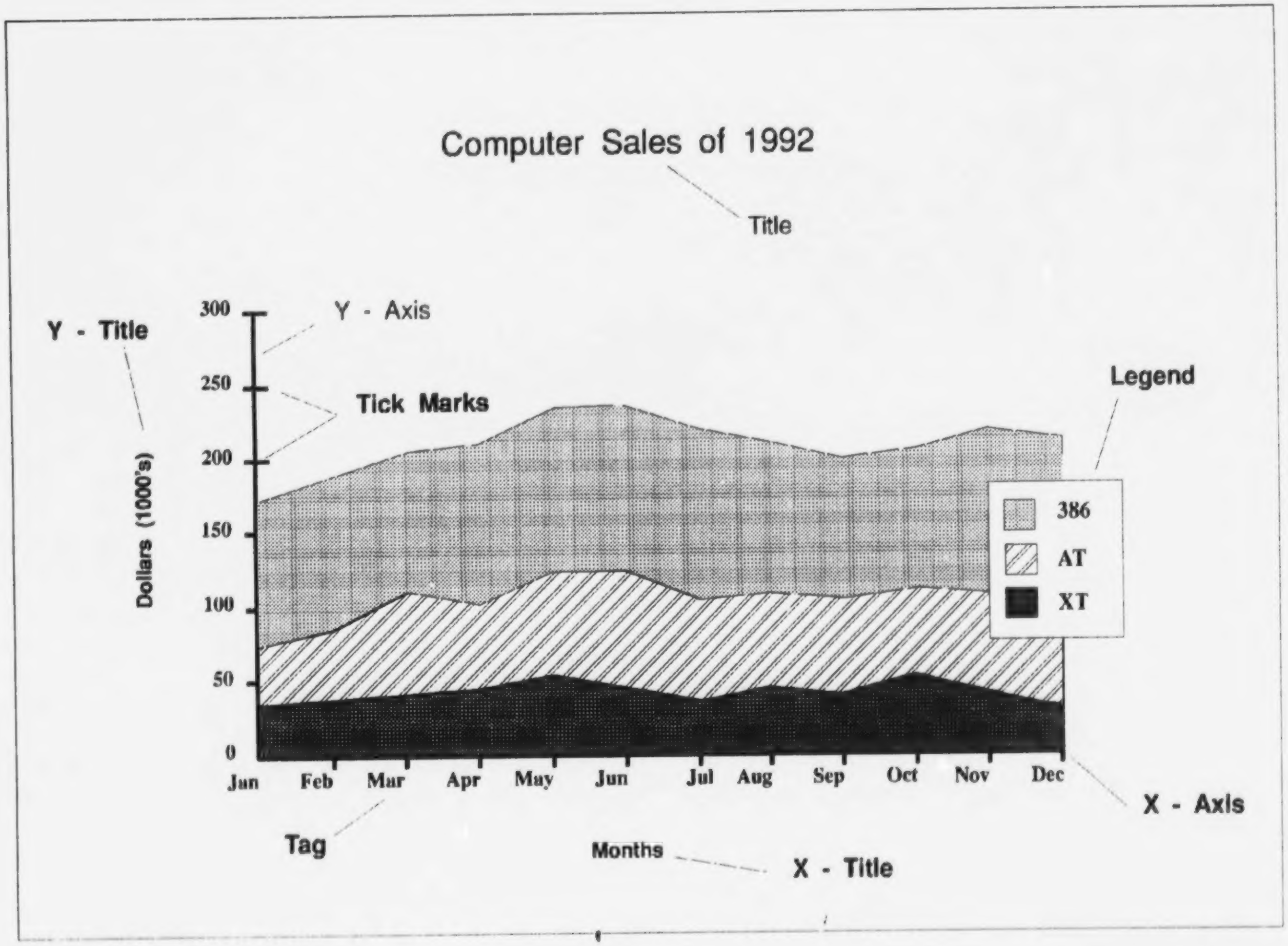


Pie Graph



Scattergram

Types of Graphs



Parts of a Graph

Matrices

ACTIVITY MATRIX

Activities	Domains			Basic Skills		
	Cognitive	Psycho-motor	Affective	Reading	Writing	Math
1	X	X		X	X	X
2 Project 1	X	X		X	X	X
Project 2	X	X		X	X	X
Project 3	X	X		X	X	X
3 Project 1	X	X		X	X	X
Project 2	X	X		X	X	X
Project 3	X	X		X	X	X

COMPETENCY TEST MATRIX

Parts	Domains			Basic Skills		
	Cognitive	Psycho-motor	Affective	Reading	Writing	Math
	X	X		X	X	X

Competency Test

Create a worksheet that will calculate the amount of commission and total gross pay for the Hill Factory Outlet salespeople.

The output should contain the following:

- Major heading
- Column headings
- Total of sales
- Total amount of commission
- Total gross pay
- Number of salespeople
- Average gross pay
- Top salesperson (use total sales)
- Appropriate graphic layout—see instruction sheet
- Printouts—see instruction sheet

Input information needed:

Salesperson	Base Pay	Commission Rate	Sales
Amerson, David	400.00	3%	4500.00
Bell, Renee	300.00	3%	1445.80
Davidson, Jeremy	300.00	4%	1320.94
Hopper, Lynn	500.00	5%	3798.76
Pearson, Jack	475.00	4%	1079.86
Smith, Dan	350.00	2%	1826.25
White, Louise	375.00	5%	3894.39

Activity Answers

Activity 1 Evaluated to the satisfaction of the instructor.

Activity 2

Project 1 Evaluated to the satisfaction of the instructor.

Project 2

Bell's Computer Center

Item	Unit	Cost Per Unit	Markup	Selling Price
Computer paper	Box	$25.98	$9.09	$35.07
DS/DD diskettes	Pkg	$10.00	$3.50	$13.50
Diskette holders	Each	$2.50	$0.88	$3.38
Diskette labels	Pkg	$1.95	$0.68	$2.63
Cable 32-988	Each	$12.98	$4.54	$17.52
Cable 32-987	Each	$23.23	$8.13	$31.36
Cable 32-675	Each	$23.54	$8.24	$31.78
Color monitor	Each	$276.00	$96.60	$372.60

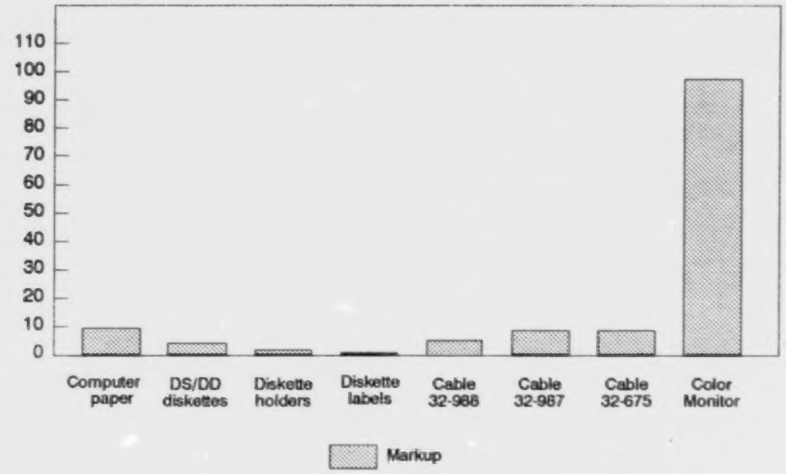
Project 3

Money Company

Date Brought	No. of Shares Brought	Stock Purchase	Selling Price	Price	Gain/ Loss
Feb 13	200	GE	$4,785.26	$5,784.21	($998.95)
Mar 20	100	IBM	$7,852.12	$8,521.45	($669.33)
May 14	200	ITT	$3,254.15	$3,025.14	$229.01
June 23	300	GRACE	$4,528.24	$4,587.22	($58.98)
July 24	200	BELL	$4,752.15	$2,584.98	$2.167.17
Aug 17	100	COL	$2,154.65	$1,458.24	$696.41

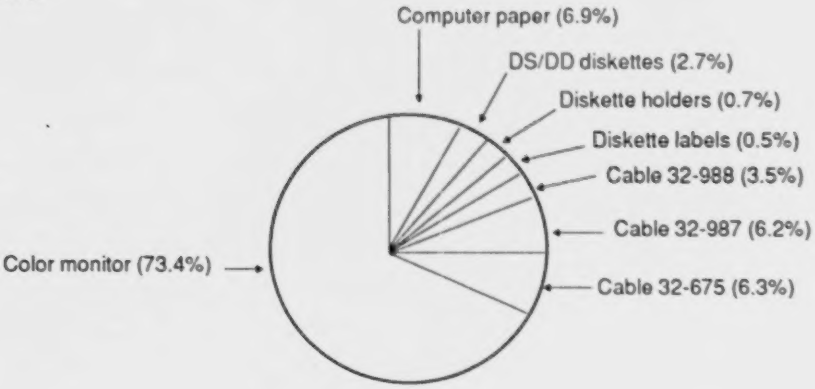
Activity 3

Project 1



Project 2 Evaluated to the satisfaction of the instructor.

Project 3



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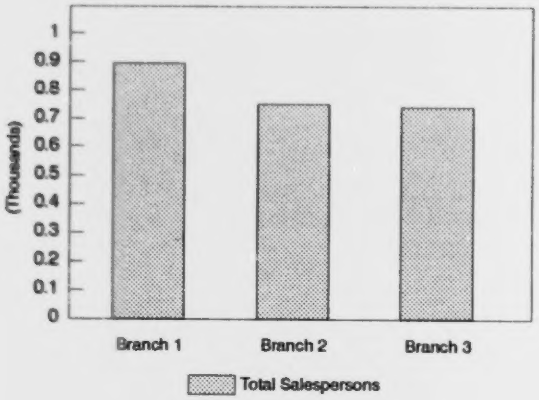
Competency Test Answers

Hill Factory Outlet

Salesperson	Base Pay	Commission Rate	Sales	Commission Pay	Gross Pay
Amerson, David	$400.00	0.03	$4,500.00	$135.00	$535.00
Bell, Renee	$300.00	0.03	$1,445.80	$43.37	$343.37
Davidson, Jeremy	$300.00	0.04	$1,320.94	$52.84	$352.84
Hopper, Lynn	$500.00	0.05	$3,798.76	$189.94	$689.94
Pearson, Jack	$475.00	0.04	$1,079.86	$43.19	$518.19
Smith, Dan	$350.00	0.02	$1,826.25	$36.53	$386.53
White, Louise	$375.00	0.05	$3,894.39	$194.72	$569.72
TOTALS			$17,866.00	$695.59	$3,395.59

No. of Salespersons	7
Top Salesperson	Amerson, David
Average Gross Pay	$485.08



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SECTION 4

Electronic Spreadsheets

Unit 1: Introduction

Unit Objective: Students will identify terminology related to the use of spreadsheets; discuss purposes, uses, and components of a spreadsheet; and demonstrate skills necessary to enter data into a spreadsheet template.

Student Competencies: After completing this unit, the student will be able to:

1. Use terminology associated with popular spreadsheet programs.
2. Discuss the purposes and uses for the spreadsheet.
3. Describe the form and components of a spreadsheet.
4. Demonstrate functions and procedures available with most spreadsheet programs to enter data into a template.

Focus: No single software application program has had a greater impact in the offices of America than the electronic spreadsheet. Personnel in all areas are discovering ways to improve productivity with the help of a spreadsheet.

Introduction to Spreadsheets 4-1

Terminology

Bar graph	A graph that plots the size of values using bars.
Block	A rectangular portion of a spreadsheet (a range).
Cell	The basic working unit of a spreadsheet; point at which a column and a row intersect; intersection of a row and a column.
Cell address	Column label followed by row label—example: A4.
Cell pointer	Highlighted indicator that designates location of current work area.
Column	A vertical line of information labeled sequentially with identifying letters or numbers.
Command line	A row on the screen that shows what command choices are available.
Coordinates	Identify the point at which columns and rows meet.
Electronic spreadsheet	A computer program that displays a computerized organization of a columnar pad. A grid of rows and columns where text, numbers, and formulas can be stored and manipulated.
Entry mode	The status of the worksheet when it is available for entering data.
Format	A command used to control how numbers are displayed on the screen.
Formulas	Arithmetic expressions that tell the computer how to calculate an entry.
Global command	Any command that affects the entire spreadsheet or document.
Graphics	Display of spreadsheet data values as a bar graph, line graph, pie chart, or other graphical representation.

Highlight	To emphasize text on the screen by displaying it in inverse video, or in a color different from the display's regular color.
Label	Any alphanumeric entry on the spreadsheet.
Line graph	A graph on which data are represented by plotting points on a grid and joining them.
Macro	A sequence of commands that is saved and can be executed much like a program.
Mode	The operating state that a program runs which is selected from a set of exclusive operating options.
Paging	Scrolling through the worksheet, one full screen at a time.
Pie chart	A chart that illustrates relationships of parts to a whole. Each value is represented as a percentage of the circle.
Pointing mode	Commands or formulas are completed by pointing to cells with the cursor, instead of keying in all the cell addresses.
Range	A rectangular group of cells; a block.
Rows	Horizontal lines of cells in the worksheet.
Scroll	A method of viewing sections of the worksheet when all sections cannot be seen at one time. The worksheet is shifted up, down, right, or left.
Stacked-bar graph	A graph that has values stacked above one another as opposed to side-by-side.
Values	Numbers or formulas that can be used in calculations.
What if	The kind of question that spreadsheets are designed to help answer (about numeric data).
Window	The part of the spreadsheet seen on the screen at one time.
Worksheet	Another name for spreadsheet.

Unit Overview

Spreadsheet usage

The name "spreadsheet" comes from the term accountants use to describe the large paper worksheets on which they organize their figures and categories.

☐ Spreadsheets

- ▲ Electronic spreadsheets follow the same format as the paper worksheet document, except that the computer's memory and screen replace the paper.
- ▲ A spreadsheet has rows and columns displayed on the screen, and words or values can be entered where desired. The size of the spreadsheet is not limited to the size of the screen. The computer can perform computations and manipulate the data.

☐ Using electronic spreadsheets in business

- ▲ The first users to "discover" spreadsheets were management-level executives, who found them invaluable for activities such as sales summaries, planning, and forecasting. Because of this, the spreadsheet is primarily thought of as a decision-making tool. Users at all levels have found that numerical data can be handled more easily with a spreadsheet than any other way.
- ▲ There are several advantages to using spreadsheets. Spreadsheets give the microcomputer user a combination of flexibility, ease of use, and power of calculation that has generally not been available, even on minicomputer systems. Budgeting, financial analysis, and forecasting become easier tasks with the use of spreadsheets.
    - Spreadsheets allow for neat, organized entry of numerical information. Changes can be made whenever necessary, either to update or to correct mistakes. This allows a clean, final report without messy erasures or cross outs.
    - The amount of memory in the computer is the only limit to the size of the spreadsheet. Pencil and paper spreadsheets become impossible to handle with just 20 or 30 rows. However, the electronic spreadsheet can be hundreds of entries long and wide. Calculations can be changed quickly, and movement around the various worksheets can be rapid.

- Mathematical formulas, figures, and labels can be entered into spreadsheets. This eliminates the need for calculators because all calculations are completed within the electronic worksheet.
- Recalculating of the results of all formulas when a number is changed can be done with one keystroke.
- Decision-making assistance continues to be the best reason for using a spreadsheet. Users can play "what if." By changing numbers in the worksheet, results of a decision can be seen in advance with little expense to the company.

Spreadsheet forms and components

The features of a spreadsheet programs vary. Common features enable a user to adapt from one to another with relative ease.

☐ Spreadsheet features

- ▲ **Mathematical—**statistical and trigonometric functions as well as the four arithmetic functions can be performed on any cells or groups of cells. Rather than requiring the user to enter complex formulas, the functions are built in. Examples are square root and average.
- ▲ **Logical operations—**work in a manner similar to mathematical operations. Results are based on comparisons of data values.
- ▲ **Data movement and changes—**cells or groups of cells can be copied from one location to another or moved. Data can be deleted and rows or columns can be inserted anywhere. Rows or columns can be hidden from view or kept in view while the rest of the spreadsheet moves.
- ▲ **Formatting of cells—**column sizes can be changed. Data can be centered or justified. Numeric data can be rounded, displayed as percentages, or displayed in dollars and cents format.
- ▲ **File handling—**spreadsheet formatting and formulas can be saved on disks, with or without data. Parts of spreadsheets can be saved or combined with other spreadsheets. Sometimes data can be transferred to other programs.
- ▲ **Printing—**to share the results of the work completed with the spreadsheet, all programs have printing capability. The data can be displayed exactly as it is seen on the screen or with additional features such as page headings and customized margins.
- ▲ **Automatic spillover—**this feature is valuable for including titles and text data without being constrained by the width of a cell. It permits the text to spill over into an adjacent vacant cell.

- ▲ **Macros**—users who frequently repeat the same long series of commands avoid tedious repetition by storing the command sequence in coded form, much like a [illegible] make up a macro which can be stored in any [illegible]

- ▲ Password [illegible] sensitive data are [illegible] a problem. A spreadsheet program with a password feature can prevent unauthorized access to the data.

- ▲ **Windows**—for some spreadsheet work, it is useful to look at two parts of the worksheet at once. The window feature allows the user to split the screen so each section displays a different part of the worksheet. The two parts can be moved or operated upon independently, or in synchronization.

☐ Screen areas

- ▲ **Worksheet area**—rows run horizontally and are generally labeled numerically. The columns run vertically and are generally labeled with letters of the alphabet. The intersection of a row and column is called a cell. Data are entered into the cells by pointing to them with the cursor, keying the data, and then pressing the ENTER/RETURN key. A cell is labeled by combining the designations for the column and the row. For example, the cell address of G46 tells the user that the cursor is on Column G, Row 46.

- ▲ **Control area**—displays commands, menus, prompts, messages, and the contents of cells being entered or edited. Some spreadsheets change the entire screen when the command menu is displayed, but commands can be entered without displaying the menu.

- ▲ **Modes**—several are available with most programs. Spreadsheet programs can generally perform only one task at a time.
  - The **enter mode** is in effect when data are being entered.
  - The **wait mode** prevents the user from entering data or commands while the disk operations or recalculations are taking place.
  - The **edit mode** is used to correct errors or to alter cell data.
  - The **point mode** is used when a command requires several items of information. Once a command is begun, the program is in point mode while waiting for the user to "point to" or complete the command.
  - The **menu mode** permits choices from a menu.

- ▲ **On-line help**—available on most programs by using specific keystrokes. Help provides reference information about the current command. It is more convenient to use than searching through the manual.

BEST COPY AVAILABLE

Basic functions and procedures

Moving the cursor one cell at a time, or many cells one after another is generally done with the arrow keys. Larger jumps can be made with other keys or other key combinations.

Named ranges are assigned to a range of cells so that the range can be used in commands and/or formulas.

☐ Data entry

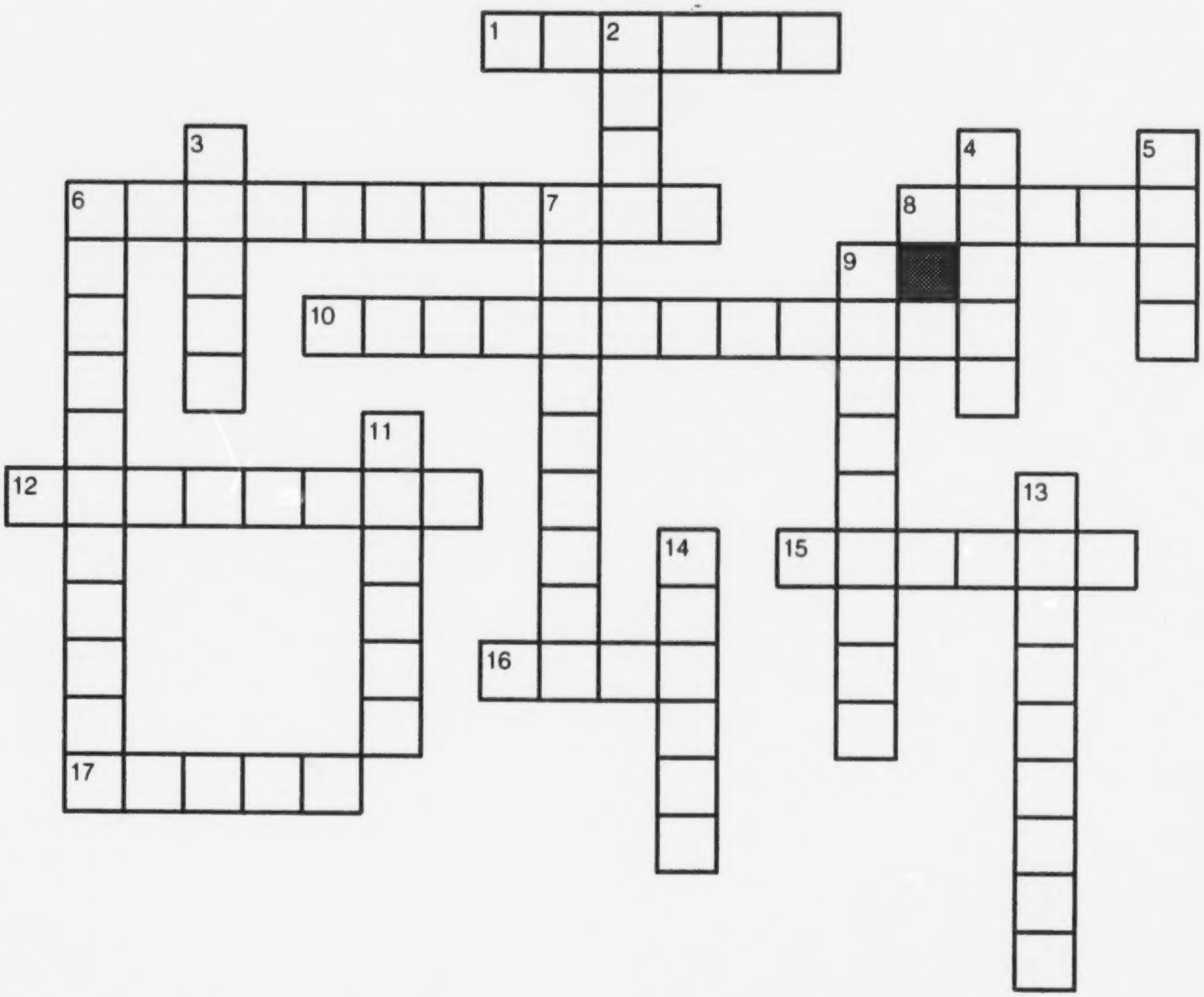
- ▲ Three types of cell entries can be keyed into a cell. Only one type of entry can be entered into a cell at a time.
    - Labels are text (alpha) characters that generally describe the contents of the worksheet. A character can be repeated to draw lines.
    - Numbers are constant numeric values, such as 365 and -12. (They are used in calculations.)
    - Formulas are written much like an algebraic expression. Either constants or cell labels (variables) can be used in the expression or cell.
- ▲ Arithmetic operators
    - + for addition
    - - for subtraction
    - * for multiplication
    - / for division
    - ^ or ** for exponent
    - ( ) as grouping symbols
- ▲ Sequence of operations
    - Evaluate arithmetic expression (formulas) from left to right
    - Begin with the innermost set of groupings first
    - Compute any exponents
    - Compute multiplication and division
    - Compute addition and subtraction
- ▲ Saving and retrieving worksheets are important steps in using worksheet programs. All the work creating a worksheet would be wasted if it could not be stored for later use.

- Saving a file involves first assigning an appropriate and acceptable filename.
- If the file has already been saved, the user has a decision to make.
    - If the file is saved under the same name, it will overwrite and erase the previous version.
    - The file's name can be changed so that a different version is saved.
- Retrieving worksheets allows the user to recall the file from a disk and load it into memory.

▲ The printing feature is included with all spreadsheet packages. The data can be displayed exactly as it is seen on the screen or with additional features, such as page headings and customized margins.

▲ Quitting or clearing the worksheet—returns the user to the operating system. Clearing the screen allows the user to remain in the program, but starts on a new or different worksheet.

ACTIVITY 1: TERMINOLOGY CROSSWORD PUZZLE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ACTIVITY 1: TERMINOLOGY CROSSWORD PUZZLE CLUES

ACROSS

1. A method of viewing sections of the worksheet when all sections cannot be seen at one time.

6. Column label followed by row label.

8. A sequence of commands that is saved and can be executed much like a program.

10. Commands or formulas are completed by pointing to cells with the cursor, instead of typing in all the cell addresses.

12. Arithmetic expressions that tell the computer how to calculate an entry.

15. The kind of question that spreadsheets are designed to help answer.

16. The basic working unit of a spreadsheet; point at which a column and a row intersect.

17. A rectangular group of cells.

DOWN

2. Horizontal lines of cells in the worksheet.

3. Another name for a range.

4. Any alphanumeric entry on the spreadsheet.

5. The operating state that a program runs which is selected from a set of exclusive operating options.

6. Highlighted indicator that designates location of current work area.

7. The status of the worksheet when it is available for entering data.

9. Another name for spreadsheet.

11. Numbers or formulas that can be used in calculations.

13. To emphasize text on the screen by displaying it in inverse video, or in a color different from the display's regular color.

14. A vertical line of information that is labeled sequentially with identifying letters or numbers.

ACTIVITY 2: SPREADSHEET USES

Write a paragraph discussing some specific business situations in which a spreadsheet can be used to solve a problem.

4-1 Introduction to Spreadsheets

Activities

ACTIVITY 3: FORM AND COMPONENTS OF SPREADSHEETS

Draw a spreadsheet screen and label the four areas of the screen. Under your drawing, write a brief description of each of the areas.

ACTIVITY 4: SPREADSHEET FUNCTIONS AND PROCEDURES

Project 1

Using the worksheet on spreadsheet commands provided by your instructor, write the keystrokes that will initiate the listed commands.

Project 2

Answer the following questions using complete sentences.

1. What is the order of operations for a spreadsheet?

2. Explain the difference between a constant and a variable.

3. Describe how to enter a formula.

Project 3

List and explain five of the common features of a spreadsheet.

1.

2.

3.

4.

5.

Project 4

Enter the following information as it appears into the template provided by your instructor.

Name	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
Lane	$150	$240	$175	$800
O'Brien	$230	$280	$300	$900
Stein	$320	$200	$125	$990
Tong	$190	$245	$135	$750
Uber	$285	$210	$165	$950

SECTION 4

Electronic Spreadsheets

Unit 2: Spreadsheet Procedures

Unit objective: Students will use a spreadsheet program to design and construct the solution to a problem and report the results both in tabular and graphical form.

Student Competencies: After completing this unit, the student will be able to:

1. Retrieve and modify data in an electronic spreadsheet and carry out the necessary steps to report the results.
2. Analyze a simple problem that is appropriate for spreadsheet solution, and design a template that can be used to solve the problem.
3. Report the results of processing with an electronic spreadsheet in both tabular and graphic form.

Focus: Once you are familiar with and have had some practice with the command structure of spreadsheet software, problem-solving activities can be performed quickly and easily. The ability to use problem-solving techniques increases employability.

Designing spreadsheets

Designing a spreadsheet is not too different from designing a picture in art class or writing a paper in English. There are logical steps to follow.

☐ Steps in designing a spreadsheet

▲ Devise spreadsheet format. Deciding on the spreadsheet format is a logical process. Each step creates a basis for the next.

- Decide what results are needed. Think about what the user needs for the reports.
- Design the report including titles, column headings, samples of the form data will take (size of columns, number of decimal places, etc.), and placement of totals. Consider the amount and size of the data, as these will influence how the report will look.
- Analyze the data that will be used for input and arrange it so that it is convenient for data entry.
- Design the input area on the screen (if it is to be different from the report) and use meaningful headings.
- Determine column widths, formats for numeric fields, headings that will remain on the screen, and data areas that will be duplicated in different parts of the worksheet.
- Create the template. This consists of entering all the titles and headings, setting up rows and columns in the desired sizes and formats, and entering any constant data that will be used every time the program is run.
- Save a copy of the template to use again with different sets of data.

▲ Apply data entry techniques. If the template has been well designed, it should be possible to key in fields without having to jump around either on the source document or the screen. The software makes data entry easier by providing helpful commands.

- **Edit mode**—the backspace key can be used to correct errors at the time data are entered, but correcting or changing data that are already entered is easier to do with the edit mode. Using the edit mode is similar to editing in a word processing program. Use the software reference manual for specific keystroke information.

- **Copy command**—most spreadsheets and reports have a lot of duplication, such as underlining and column headings. For example, if columns headed by the days of the week were needed in two or more areas of the spreadsheet, it would be much easier to copy the whole group of cells than to retype the headings. Procedures for using the copy command vary among programs.

▲ Revise and update spreadsheet information. When revisions are made, it is usually wise to save the spreadsheet onto a disk before making changes. Then, it will be easy to retrieve the previous version if needed.

Reasons for making changes

- The actual data values may need to be changed.
- The user might want to play "what if" with different values in certain cells.
- Conditions may change that would affect the data within a spreadsheet.
- A template that is used weekly or daily can retain some of the data. Other cells use new data each time.

▲ Create, format, and print a report

- Much of the work of creating a report is done as part of the spreadsheet format. For small spreadsheets, the report is often the same as the input design. When this is not true, the report is designed on a separate part of the worksheet.

▲ Retrieve, modify, print, and store template data

- When a "save" command is given, the spreadsheet is saved in exactly the form it is in at the time the command is executed. It even saves the location of the pointer.
- It is possible to save several versions of a spreadsheet merely by modifying data and then saving again, using a different name. This makes it possible to keep templates, which are nothing more than spreadsheet formats without the data. When printing, several formats may be required.
- When multiple versions are to be saved, it is wise to set aside an area on the worksheet for comments and identification. This might include a date, a description, and a purpose. When the spreadsheet or template is retrieved, the comment area serves as a reminder of important facts.

- ▲ Generate appropriate graphic layouts
    - The user decides through experimentation which type of graph, scale, and labels or legends to use for displaying spreadsheet data.
    - Once a graph has been selected, it can be saved on a disk. If the data in the spreadsheet changes, the graph display will reflect the changes.

Using the spreadsheet

☐ Entering and editing data

If the first character entered is a letter, most programs assume a label is being entered. To override the program's assumptions, key in a designated key or symbol before keying the label's first character.

If the first character entered is a number, most programs assume a numeric value is being entered. The format determines the way numbers are entered, not the way the numbers are displayed on the screen.

If a mistake is noticed while entering data, use the BACKSPACE key to erase all or part of the data. If the ENTER key has been pressed, a command will have to be used to put the program in edit mode to insert or delete characters. Inserting and deleting rows and columns will have to be done if an error was made, additional information needs to be added, information is no longer needed, or you just want to make the spreadsheet look better.

- ▲ Windows—split the screen either vertically or horizontally so that two areas of the spreadsheet can be viewed through two windows simultaneously. When the screen is split, the windows can be scrolled together (synchronized) or independently (unsynchronized).
- ▲ Moving data—rows and columns can be moved from one location in a spreadsheet to another. This allows for the placement of rows and columns in any order. Arithmetic formulas and mathematical functions will need to be checked after the move.
- ▲ Copying data—the contents of any cell or range of cells can be duplicated in another area of the spreadsheet. The major advantage in being able to copy data is an arithmetic formula or mathematical function can be copied from one cell to another. Relative formulas will change to fit the cell addresses but absolute formulas will not.
    - **Relative cell reference—**when the formula is copied, it will refer to a cell in the same relative position to the cell to which it is copied.
    - **Absolute cell reference—**when the formula is copied elsewhere on the spreadsheet, it continues to refer to that same cell. Absolute references are frequently indicated with dollar signs.

☐ Formatting the worksheet

▲ Formatting options

- **Ranges—**a range is a single cell or a group of adjacent cells arranged in a rectangular pattern. Select ranges for commands that copy, move, save, format, print, calculate, or erase. To select a range, key in the coordinates or use the cursor to point. Some programs allow names to be assigned to ranges for future reference.
- **Column widths—**all columns are set to a default width. The width of the column indicates how many characters can be entered. Some programs cut off labels that are longer than the column width. Others allow labels to spill over into the adjacent column. If the entry is numeric, the program might display it in scientific notation or fill the cell with symbols, such as ***, !!!, or ###.
- **Currency—**displays all numbers in standard dollars and cents form.
- **Fixed decimal places—**specify how many places numbers will be carried out.
- **Comma—**groups large numbers in the normal way, with commas.
- **Percentage—**multiplies values by 100 and displays a percent sign.
- **Signs—**displays plus or minus signs.
- **Labels—**displays left-justified, right-justified, or centered.

▲ Fixed titles

- Top-most rows and left-most columns are frequently used for identifying labels. When scrolling, those labels might temporarily disappear from the screen. Fixing titles can prevent this.
- Most spreadsheet programs provide a method by which these cells can be "frozen in place," meaning that they remain stationary while the rest of the cells scroll. Four choices are generally offered: fix rows, fix columns, fix both rows and columns, and clear or unfix rows and columns.

☐ Built-in functions

These functions are designed to perform commonly used calculations. Functions simplify the entry of formula-building in the worksheet. Functions have syntax they must follow. The functions available vary with the software.

▲ **Mathematical functions—**some or all might be included:

- **INT—**finds the whole number value of a cell.
- **MOD—**finds the integer remainder in division.

- **SQRT**—finds the square root.
- **ABS**—finds the absolute value.
- **RAND**—chooses a random number between 0 and 10.
- **ROUND**—rounds to a given number of places.
- **LOG**—finds the Log base 10.
- **EXP**—the exponentiation function.
- **LN**—the Natural Log.
- **PI**—the value 3.14159.

▲ **Trigonometric functions**—SIN, COS, TAN, ASIN, ACOS, ATAN are available with some software programs.

▲ **Statistical functions**—most programs have the following:

- **SUM**—totals any group of cells.
- **AVG**—averages a set of values.
- **COUNT**—finds out how many cells have values.
- **MAX**—finds the highest of a group of values.
- **MIN**—finds the lowest of a group of values.
- **STD**—standard deviation (not in all software).
- **VAR**—variance (not in all software).

▲ **Lookup tables**—will check for a specified value on a row or column of the table and select a corresponding value. The exact syntax and arguments of lookup functions vary from program to program.

▲ **Macros**—are simply a way to store keystrokes so they can be used later. They can save time by not having to rekey repetitive data or commands.

▲ **Combining and extracting files**—is allowed in most programs. This function combines all or part of another file on the disk with the model on the screen. Extracting files copies a part of a worksheet to its own file on a disk.

Printing

☐ Reports

Printing is used to make a hardcopy of all or part of a spreadsheet.

▲ Print format controls

- **Range print**—printing a selected area or all of the spreadsheet.
- **Headers/Footers**—may include label, page number, date, and time.
- **Borders**—show column letters and row numbers.
- **Printer codes**—setups to change printer codes.
- **Margins**—set the border of the left and right side of the paper.
- **Page breaks**—number of lines per page.
- **Printing cell contents**—prints only formulas and functions instead of just the resulting values.

☐ Graphic reports

Some spreadsheet programs are integrated with a program that produces graphs. Those spreadsheet programs without graphic capabilities usually can be used with a stand-alone graphics program.

▲ Types of graphs

- **Bar graph**—is most appropriate when displaying comparative values and when the number of values being compared is less than 15 or 20. Typically, a date or a category is listed along the bottom line and bars rise from the axis to a height represented by a scale along the left-hand edge.
- **Stacked bar graph**—is a variation on which two or three values are displayed on each bar by using a different color or gray shade. An example of a stacked bar would be one where sales figures were shown for each month, but with comparative figures for each of two years shown on each bar.
- **Line graph**—a point is plotted for each date or category and the points are joined, making a line (usually not straight). Line graphs are preferred when there are numerous categories. They are not very effective when there are only four or five categories.
- **X-Y graph**—the x-y graph is sometimes called a scattergram because many points can be plotted. Each point to be plotted would have both an x and a y value. Graphs of this type can be used to show relationships. An example would be to relate grade point averages with SAT scores for a large number of students. To show a meaningful pattern, an x-y graph needs many points plotted.

- **Pie chart**—data which can be expressed as a percentage can be graphed with a pie chart. A circle is displayed, divided into segments according to the percentage represented. Each segment is a different color or gray shade. Pie charts work well when there are from two to eight categories. With many more, it becomes hard to distinguish among them.

ACTIVITY 1: RETRIEVING AND MODIFYING A SPREADSHEET

Using the sales spreadsheet template completed in Unit 1, Activity 4, Project 4, modify the data according to the instructions provided by your instructor. Print a copy of your spreadsheet.

ACTIVITY 2: ANALYZE SIMPLE PROBLEMS AND DESIGN TEMPLATES

Project 1

The administration needs a textbook report. Analyze this problem and design a template that can be used to solve it. Obtain the textbook information from your instructor.

The output should contain the following:

- Major heading
- Column headings
- Total number of books
- Total inventory cost

Input information needed:

- Book
- Publisher
- Number on hand
- Cost

Project 2

Analyze the following problem and design an appropriate spreadsheet for the solution. Print a copy of the spreadsheet and turn it in to your instructor.

Bell's Computer Center has just received the following merchandise:

Item	Unit	**Cost per Unit**
Computer paper	Box	25.98
DS/DD diskettes	Pkg	10.00
Diskette holders	Each	2.50
Diskette labels	Pkg	1.95
Cable 32-988	Each	12.98
Cable 32-987	Each	23.23
Cable 32-675	Each	23.54
Color monitor	Each	276.00

The markup on each item is 35% of the unit cost. Calculate the markup and selling price for each item received.

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Project 3

Analyze the following problem and design an appropriate spreadsheet for the solution. Print a copy of the spreadsheet and turn it in to your instructor.

Prepare a stock report for the Money Company. Determine whether there was a gain or loss on each transaction as well as the amount of gain or loss. Below are the transactions:

Date Bought	No. of Shares Bought	Stock Purchase	Selling Price	Price
Feb 13	200	GE	4785.26	5784.21
Mar 20	100	IBM	7852.12	8521.45
May 14	200	ITT	3254.15	3025.14
June 23	300	GRACE	4528.24	4587.22
July 24	200	BELL	4752.15	2584.98
Aug 17	100	COL	2154.65	1458.24

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ACTIVITY 3: SPREADSHEET REPORTING

Project 1

Enter the following information and then create a bar graph showing the total salespeople for each branch of the company. Use appropriate labels for the graph.

Green's Music Company

Titie	Branch 1	Branch 2	Branch 3
Trainee	358	257	159
Jr. Sales	316	159	245
Sr. Sales	214	324	321

Project 2

Using the information from Activity 2, Project 1, create a bar and a pie graph. Use appropriate labels for the graph.

Project 3

Using the information from Activity 2, Project 2, create a bar and a pie graph. Use appropriate labels for the graph.

SECTION 5
Information Processing Tools

Essential Elements 75.87 (j)(5)

5. **Fundamental concepts and skills related to emerging microcomputer-based information processing tools. The student will be provided opportunities to:**

   A. understand the concepts of exchanging information via telecommunication software, at least including electronic mail, remote bulletin board access, and access of on-line information services;

   C. understand concepts and identify characteristics and uses associated with tools for desktop publishing and generation of presentation graphics;

   D. understand concepts related to transporting of textual and non-textual data both locally and remotely, at least including transporting of text and facsimile images electronically, and physical transfer of ultra-high density storage media; and

   E. understand concepts related to networked and multi-user configurations.

Lesson Plan

Essential 75.87 Elements: (j)(5)(A)(D)
Allocated Time: 5/10 Hours

Unit Objective: Students will gain an understanding of the concepts of exchanging data through telecommunications, including electronic mail, bulletin board, on-line information services, and facsimile transmissions.

Student Competencies: After completing this unit, the student will be able to:

1. Use terminology common to telecommunications.
2. Describe procedures for communicating with electronic bulletin boards, on-line information services, and facsimile transmissions.
3. Explain the concept of electronic mail.

Focus: Telecommunications is growing in importance within the business world. Information can be received and sent in a few moments rather than a few days. Having timely information increases accuracy and productivity; therefore, all personnel need to know basic telecommunications skills.

Domains: Activities and competency tests provide learning experiences within the cognitive, psychomotor, or affective domains and are coded on the Activity and Competency Test Matrices.

Basic Skills: Activities and competency tests reinforce the basic skills of reading, writing, and mathematics and are coded on the Activity and Competency Test Matrices.

5-1 Telecommunications

Content Outline

Concepts of data communications

System requirements
Data communication procedures

Types of communication services available

Electronic bulletin board systems (BBS)
On-line information services
Voice messaging or voice mail
Facsimile (FAX)

Electronic mail concepts (E-mail)

Using E-mail
Importance and future of telecommunications

Teacher Activities

Teacher Preparation

- ☐ Preview the unit.
- ☐ Review unit objectives.
- ☐ Make instructional analysis.
- ☐ Assess student learning needs.
- ☐ Decide on lesson domain: cognitive, psychomotor, or affective domain.
- ☐ Select instructional materials based on instructional analysis and student learning needs.
- ☐ Select instructional strategies based on lesson content and student learning needs.
- ☐ Prepare lesson plans from the unit lesson.
- ☐ Prepare additional instructional material.
- ☐ Reserve necessary media and equipment.

Teacher Presentation

- ☐ Present student objectives.
- ☐ Establish rapport with students.
- ☐ Review lesson objectives with students.
- ☐ Relate lesson to prior or future learning.
- ☐ When appropriate, encourage student interaction through questioning, discussions, or some other strategy.
- ☐ Emphasize the value/importance of the unit or activity.
- ☐ Allow time for closure of a lesson.

Reteach Activities

- ☐ Identify area(s) of weakness from results of evaluation.
- ☐ Select unit activities not previously used.
- ☐ Use additional resources and/or create materials based on student learning needs.
- ☐ Use a different teaching strategy in reteaching.
- ☐ Retest.

Specific Teaching Activities

☐ Prepare bulletin boards with pictures of various types of modems and brochures about teleprocessing hardware and software.

☐ Arrange for a dedicated phone line, modem, and communication software to be available for use or provide simulators.

☐ Demonstrate procedures for using a modem.

☐ Invite a local cable and/or telephone company representative to discuss his/her part in telecommunications. Have the speaker discuss how telecommunications affects the community.

☐ Arrange with the librarian to have sources on telecommunication available. Have the students, working in pairs, go to the library to compile a list of bulletin board systems in your area and the kinds of services they provide.

☐ Obtain a membership in a local BBS or TENET for classroom use.

☐ Secure a FAX to be used in your classroom for a week. Lease, borrow, or have a vendor bring one and demonstrate it.

☐ Arrange to use the school's or district's FAX at its site, and have groups of students FAX to one another.

☐ Determine the steps to access various on-line information services available in your area.

☐ A portion of the simulation, *Office Greenery, Inc.*, includes telecommunication. Examine the simulation to determine whether to use it after this unit or after Desktop Publishing. You can use this as a culmination activity or test for the section or save it for the course closure. Refer to the special products pages located at the front of this book for additional simulations that can be used if this course is the only office education course taught at your school.

☐ Remember to use the *Test Builder Program* and the related Test Bank. Refer to Appendix D for the *MAP Test Bank* question revisions for Section 5, Unit 1.

Activity 2

Project 4

1. Provide the students with a document to FAX. They might use a document they have already prepared or create a new one.
2. Divide students into two groups to design a FAX cover sheet and to decide which document to send.
3. Have one group of students in the classroom FAX a letter to a second group of students at the district or the school FAX.
4. A variation of this activity is to arrange with another school in your local phone area to have that group of students FAX information to your group and vice versa.
5. Or arrange with a business in your area to receive a FAX and return one to your students.

Matrices

ACTIVITY MATRIX

Activities	Domains			Basic Skills		
	Cognitive	Psycho-motor	Affective	Reading	Writing	Math
1	X			X	X	
2 Project 1			X	X	X	
Project 2		X		X		X
Project 3	X				X	
Project 4		X	X		X	X
3 Project 1	X				X	
Project 2	X				X	

COMPETENCY TEST MATRIX

Parts	Domains			Basic Skills		
	Cognitive	Psycho-motor	Affective	Reading	Writing	Math
I	X			X	X	
II	X				X	
III Project 1	X				X	
Project 2	X				X	

Telecommunications 5-1

Competency Test

PART I: TERMINOLOGY

Complete the following statements by filling in the blanks.

1. The number of bits per second that is sent by phone line from one computer to another is called ______________________________.
2. The computer generates ______________________________, which must be converted to ________________________ in order to be sent over the phone lines.
3. The connection between the sender and the receiver is called the ______________________.
4. The device that modulates and demodulates the signal that is transmitted is a(n) ______________________.
5. If communication can take place in both directions at once, the mode is ___________________.
6. Odd or even ________________ is used to check data accuracy.
7. ______________________ is a set of rules for exchange of information between computers.
8. Computers that are connected by wire rather than phone lines are said to be ________________.
9. The type of modem that uses a telephone handset to connect the computer to a phone line is a(n) __________________________.
10. A transmission method using glass fibers is____________________.
11. Receiving a data file from another computer is ________________.
12. ________________________ is a process in which the receiving computer sends a signal to tell the sending computer that it is ready to receive data.
13. ______________ is the transmission of data for electronic storage and subsequent retrieval.
14. Conversion of a signal from digital to analog is ______________.
15. A ___________________ is an input-output device that is used to access data from a computer.

5-1 Telecommunications

Competency Test

PART II: BULLETIN BOARDS AND ON-LINE INFORMATION SERVICES

Answer the following questions.

1. List, in sequence, the steps in accessing an on-line information service.

2. List three categories of information available from on-line information services.

   1.

   2.

   3.

3. What components are needed for two computers to communicate?

4. What is the difference between an electronic bulletin board and an on-line information service?

Competency Test

PART III: CONCEPTS OF ELECTRONIC MAIL

Project 1

Give two reasons why a person might use electronic mail.

1.

2.

Project 2

List three advantages of using E-mail.

1.

2.

3.

Activity Answers

Activity 1

```
                          E   D
      P R O T O C O L     M   O
                H         A   W
M           A N A L O G S I G N A L   S
U   H           N         L   L       W
L E A S E D L I N E S   A     O   D   I
T   N           E       C     A   I   T
I   D E M O D U L A T I O N   D   G   C
D   S                   U         I   H
R   H                   S         T   E
O   A         B U L L E T I N B O A R D
P   K                   I         L   L
L   I                   C         S   I
I   N                   C         I   N
N   G   M O D U L A T I O N       G   E
E                       U         N
            F U L L D U P L E X   A
                        L         L
          B A U D R A T E
                        R
```

Activity 2

Projects 1-4 Evaluated to the satisfaction of the instructor.

Activity 3

Project 1 Evaluated to the satisfaction of the instructor. The following can be used as a guideline.

1. A telegram is the oldest type of electronic mail. Samuel Morse developed the telegraph in 1835.
2. Mailgrams are messages that are transmitted from Western Union to the local post office where they are printed. They are delivered the next day with the regular mail.
3. Telex/TWX are operated by the Western Union Telegraph Company. They are similar to the conventional telephone network, but they use

teleprinters and hardcopy output instead of telephones and voice communication.

4. Communicating word processors expand E-mail's capability. They simplify composing and editing messages.
5. Computer hardware- and software-based systems are used in the preparation, transmission, storage, and retrieval of messages.

Project 2 Evaluated to the satisfaction of the instructor. The following can be used as a guideline.

1. Messages can be delivered at a predictable time.
2. Cuts communication time from days to minutes.
3. Can store and recall messages.
4. Each member has a "mailbox" in which others can leave messages that will remain until the owner chooses to erase them.
5. People who travel can access their E-mail from any terminal.
6. Messages can be stored and forwarded to a computer at another site.

Competency Test Answers

Part I

1. Baud rate
2. Digital signals
3. Channel
4. Modem
5. Full duplex
6. Parity
7. Protocol
8. Hard-wired
9. Acoustic coupler
10. Fiber optics
11. Downloading
12. Handshaking analog signals
13. E-mail
14. Modulation
15. Terminal

Part II (answers are samples)

1. (an example using Compuserve)
   a. Turn on the computer
   b. Set the protocol (300 baud, full duplex, even parity)
   c. Dial the access phone number
   d. After connection, type a CTRL C
   e. Type in authorized identification number

2. Any three of the following:
   Stock market information
   Games
   News events
   Travel information
   Shopping information
3. Computer, modem, channel, another modem, another computer
4. Bulletin boards are free or have a small membership charge.
   Information services charge by access time in addition to a membership charge.
   Bulletin boards are limited in scope and size.
   Information services maintain large databases.
   Bulletin boards are run by clubs or individuals.
   Information services are commercial enterprises.

Part III

Project 1 Evaluated to the satisfaction of the instructor. The following can be used as a guideline.

1. A person who needs to send communications, but is not able to access the computer at the same time as the person(s) with whom he/she needs to exchange messages can leave messages in the owner's "mailbox."
2. A person whose business requires traveling can receive messages anywhere a terminal is available.

Project 2 Evaluated to the satisfaction of the instructor. Any three of the following might be used.

1. Messages can be delivered at a predictable time.
2. Cuts communication time from days to minutes.
3. Can store and recall messages.
4. Each member has a "mailbox" in which others can leave messages that will remain until the owner chooses to erase them.
5. People who travel can access their E-mail from any terminal.
6. Messages can be stored and forwarded to a computer at another site.

Networking 5-2

Lesson Plan

Essential Elements: 75.87 (j)(5)(E)

Allocated Time: 2.5/5 Hours

Unit Objective: Students will use terminology related to networking and discuss network configurations, components, advantages, and disadvantages.

Student Competencies: After completing this unit, the student will be able to:

1. Use terminology associated with networking.
2. Identify configurations for local area networks.
3. Describe components common to networks.
4. Discuss advantages and disadvantages of networking.

Focus: Using networks allows you to send and receive information faster than traditional methods of exchanging information. All potential employees and those already in business should have basic knowledge about networks.

Domains: Activities and competency tests provide learning experiences within the cognitive, psychomotor, or affective domains and are coded on the Activity and Competency Test Matrices.

Basic Skills: Activities and competency tests reinforce the basic skills of reading, writing, and mathematics and are coded on the Activity and Competency Test Matrices.

5-2 Networking

Content Outline

Network concepts

Network configurations
Common components
Purposes of networking
Network setup

Using a network

LANs
Large networks

Network advantages and disadvantages

Advantages
Disadvantages

Teacher Activities

Teacher Preparation

☐ Preview the unit
☐ Review unit objectives
☐ Make instructional analysis
☐ Assess student learning needs
☐ Decide on lesson domain: cognitive, psychomotor, or affective domain
☐ Select instructional materials based on instructional analysis and student learning needs
☐ Select instructional strategies based on lesson content and student learning needs
☐ Prepare lesson plans from the unit lesson
☐ Prepare additional instructional material
☐ Reserve necessary media and equipment

Teacher Presentation

☐ Present student objectives
☐ Establish rapport with students
☐ Review lesson objectives with students
☐ Relate lesson to prior or future learning
☐ When appropriate, encourage student interaction through questioning, discussions, or some other strategy
☐ Emphasize the value/importance of the unit or activity
☐ Allow time for closure of a lesson

Reteach Activities

☐ Identify area(s) of weakness from results of evaluation
☐ Select unit activities not previously used
☐ Use additional resources and/or create materials based on student learning needs
☐ Use a different teaching strategy in reteaching
☐ Retest

Specific Teaching Activities

☐ Prepare transparencies to illustrate network configurations.

☐ Invite a speaker to discuss capabilities and advantages of distributed data processing.

☐ Obtain literature about networking hardware and software for microcomputers.

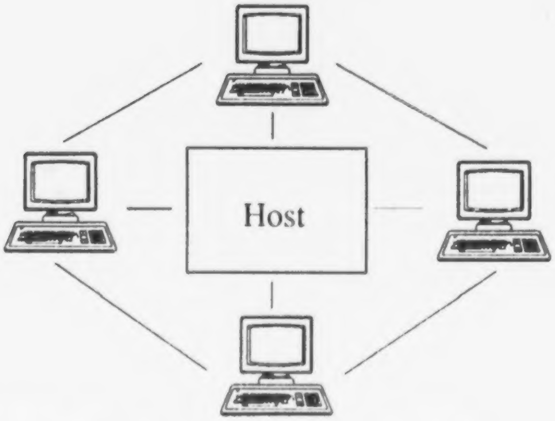
☐ Arrange a field trip to a site where a mainframe is used to operate a multi-user system with microcomputers as workstations. If you do not have a networked lab, take the students to see a networked lab with micros and a server.

☐ Invite a vendor who installs local area networks to speak about requirements and procedures of installation.

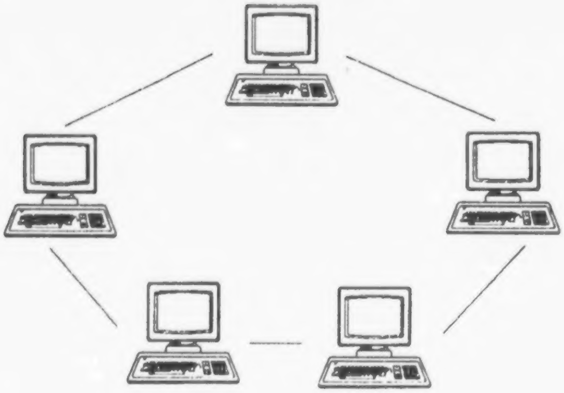
☐ Remember to use the *Test Builder Program* and the related Test Bank. Refer to Appendix D for the *MAP Test Bank* question revisions for Section 5, Unit 4.

Networks

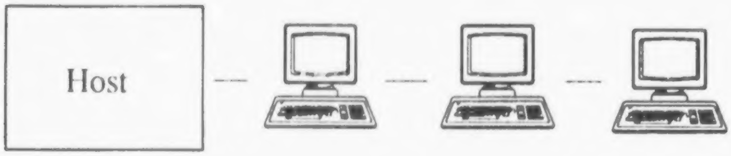
Star Network



Ring Network



Bus (Tree) Network



Matrices

ACTIVITY MATRIX						
Activities	Domains			Basic Skills		
	Cognitive	Psycho-motor	Affective	Reading	Writing	Math
1	X				X	
2	X	X			X	
3	X				X	
4	X				X	

COMPETENCY TEST MATRIX						
Parts	Domains			Basic Skills		
	Cognitive	Psycho-motor	Affective	Reading	Writing	Math
I	X			X	X	
II	X	X			X	
III	X				X	
IV	X				X	

Competency Test

PART I: TERMINOLOGY

Fill in the blanks with the appropriate terms.

____________________ 1. The file server in a local network or the mainframe in other networks.

____________________ 2. The host computer in a network that coordinates communication and has central storage capability available to the network.

____________________ 3. An acronym for Local Area Network; a network that is limited to one room, building, or complex.

____________________ 4. The line is controlled by the host computer asking each terminal, in turn, if it has a message to send.

____________________ 5. An organization, such as the telephone company, authorized by the FCC to offer communication services.

____________________ 6. A type of ring network in which messages need not pass to adjacent stations.

____________________ 7. A local area network in which the workstations are connected to each other, but without a central host.

____________________ 8. The host or file server when it is used only for coordinating the network.

____________________ 9. A network configuration in which a central computer is directly connected to each terminal.

____________________ 10. A computer connected to a mainframe for the purpose of controlling (terminal controller) data input and output.

5-2 Networking

Competency Test

PART II: NETWORK CONFIGURATIONS

Name and sketch two major network configurations.

1.

2.

PART III: NETWORK COMPONENTS

Discuss components and the information flow of the following types of networks.

LANs

Large networks

5-2 Networking

Competency Test

PART IV: ADVANTAGES AND DISADVANTAGES OF NETWORKING

List two advantages and two disadvantages of networking.

Advantages

1.

2.

Disadvantages

1.

2.

Activity Answers

Activity 1

1. **Host computer**—the file server in a local network or the mainframe in other networks.

2. **Common carrier**—an organization, such as the telephone company, authorized by the FCC to offer communication services.

3. **File server**—the host computer in a network that coordinates communication and has central storage capability available to the network.

4. **Ring**—a local area network in which the workstations are connected to each other, but without a central host.

5. **Polling**—the line is controlled by the host computer asking each terminal, in turn, if it has a message to send.

6. **Token ring**—a type of ring network in which messages need not pass to adjacent stations.

7. **Multistar**—a network configuration in which mainframes, each with its own star network, are connected together.

8. **Front end processor**—a computer connected to a mainframe for the purpose of controlling (terminal controller) data input and output.

9. **LAN**—an acronym for Local Area Network; a network that is limited to one room, building, or complex.

10. **Slave computer**—the host or file server when it is used only for coordinating the network.

11. **Star**—a network configuration in which a central computer is directly connected to each terminal.

12. **Multiplexing**—messages from several low-speed sources combined onto one high-speed line.

Activity 2 Drawing of network configurations evaluated to the satisfaction of the instructor.

Activity 3 Evaluated to the satisfaction of the instructor. The following can be used a guideline.

1. **File server**—like an electronic file cabinet that allows the users to access and share the same storage area.

2. **Workstations**—the microcomputers or terminals connected to the network which can share information through it.

3. **Channel**—with local area networks, cables usually join the stations together. It depends on the specific application whether twisted pair cables, coaxial cables, phone lines, fiber optic cables, or other cables can be used.

4. **Software**—programs have been written specifically to coordinate the network hardware with the operating systems of the computers for ease and convenience of the users.

Activity 4

Advantages

1. They can access and share data files.
2. They can send and receive messages from others on the network.
3. Backup terminals are available when needed.

Disadvantages

1. The cost and complication of selecting, installing, and maintaining the network hardware and software.
2. If there is a dependency on the central files and adequate backup is not maintained, the same problems could occur as in any centralized system—loss of data and costly and lengthy recovery. If the file server is down, then the whole network is down.

Competency Test Answers

Part I

1. Host computer
2. File server
3. LAN
4. Polling
5. Common carrier
6. Token ring
7. Ring
8. Slave computer
9. Star
10. Front end processor

Part II

Evaluated to the satisfaction of the instructor.

1. **Ring network**—each station is joined to two other stations in the form of a ring, although they need not be located in a circle.
2. **Star network**—each station is joined to the same computer in the form of a star.
3. **Tree (bus) network**—a single bidirectional communication link in which information moves sequentially.

Part III

Evaluated to the satisfaction of the instructor. The following can be used as a guideline.

LANs are linked together with coaxial cables or another form of channel and are located in close proximity to other terminals.

1. The file server allows access to the software and public files.
2. Each terminal user can access the program needed.
3. After the user has completed the work, information is sent back to the file server so someone else can use the information without asking for a hardcopy or a copy of the disk.

Larger networks link a minicomputer or a mainframe with a series of individual computers. These larger computers link to other large computers through the use of telephone lines, fiber optics, satellites, etc.

1. Information sent from a terminal must be coded through the multiplexer and the modem before entering the channel.
2. As information flows through the channel and is accepted by the receiving modem and multiplexer, it is transferred to the front-end processor which controls the input.

3. When information is received by the mini or mainframe computer, it is stored for later use by a single workstation or another network.

Part IV Evaluated to the satisfaction of the instructor. The following can be used as a guideline.

Advantages

1. They can access and share data files.
2. They can send and receive messages from others on the network.
3. Backup terminals are available when needed.

Disadvantages

1. The extra cost and complication of selecting, installing, and maintaining the network hardware and software.
2. If there is a dependency on the central files and adequate backup is not maintained, the same problems could occur as in any centralized system—loss of data and costly and lengthy recovery. If the file server is down, then the whole network is down.

Lesson Plan

Essential Elements: 75.87 (J)(5)(C)
Allocated Time: 5/10 Hours

Unit Objective: Students will apply basic graphic design techniques when creating thumbnail and rough sketches of a page layout.

Student Competencies: The student will be provided opportunities to:

1. Identify terminology related to layout and design.
2. Use graphic layout and design techniques to prepare a thumbnail sketch.
3. Create a rough page layout.

Focus: A basic knowledge of graphic layout and design techniques is essential for producing top-quality desktop publishing documents. These skills will enhance the beginning office worker's chance for advancement.

Domains: Activities and competency tests provide learning experiences within the cognitive, psychomotor, or affective domains and are coded on the Activity and Competency Test Matrices.

Basic Skills: Activities and competency tests reinforce the basic skills of reading, writing, and mathematics and are coded on the Activity and Competency Test Matrices.

5-3 Graphic Layout and Design

Content Outline

Planning a design

Guidelines
Selecting the right document
Balance and emphasis

Creating the page layout

Graphic elements
Steps in laying out a page

Teacher Activities

Teacher Preparation

- ☐ Preview unit.
- ☐ Review unit objectives.
- ☐ Make instructional analysis.
- ☐ Assess student learning needs.
- ☐ Decide on lesson domain: cognitive, psychomotor, or affective domain.
- ☐ Select instructional materials based on instructional analysis and student learning needs.
- ☐ Select instructional strategies based on lesson content and student learning needs.
- ☐ Prepare lesson plans from the unit lesson plan.
- ☐ Prepare additional instructional material.
- ☐ Reserve necessary media and equipment.

Teacher Presentation

- ☐ Present student objectives.
- ☐ Establish rapport with students.
- ☐ Review lesson objectives with students.
- ☐ Relate lesson to prior or future learning.
- ☐ When appropriate, encourage student interaction through questioning, discussions, or some other strategy.
- ☐ Emphasize the value/importance of the unit or activity.
- ☐ Allow time for closure of a lesson.

Reteach Activities

- ☐ Identify area(s) of weakness from results of evaluation.
- ☐ Select unit activities not previously used.
- ☐ Use additional resources and/or create materials based on student learning needs.
- ☐ Use a different teaching strategy in reteaching.
- ☐ Retest.

Specific Teaching Suggestions

☐ This unit and the one on desktop publishing are designed to work together. This unit should be taught prior to the desktop publishing unit. Activities created in this unit will be used in the desktop publishing unit.

☐ Prepare bulletin boards illustrating layouts, type styles, clip art, and other tools.

☐ Invite a layout artist to speak to the class.

☐ Team teach with the art teacher on layout. Have them emphasize problems in design.

☐ Invite a journalism teacher to speak to your class and show procedures from the beginning to the final copy of the school newspaper or yearbook.

☐ Visit a print shop or an in-house desktop publishing department in a business.

☐ Accumulate magazines, newspapers, and other printed material for students to use as sources for their portfolios.

☐ A single simulation has not been designed for Layout and Design; however, *Office Greenery, Inc.* can be used with this unit and with desktop publishing.

☐ Remember to use the *Test Builder Program* and the related Test Bank. Refer to Appendix D for the *MAP Test Bank* questions.

Activity 2

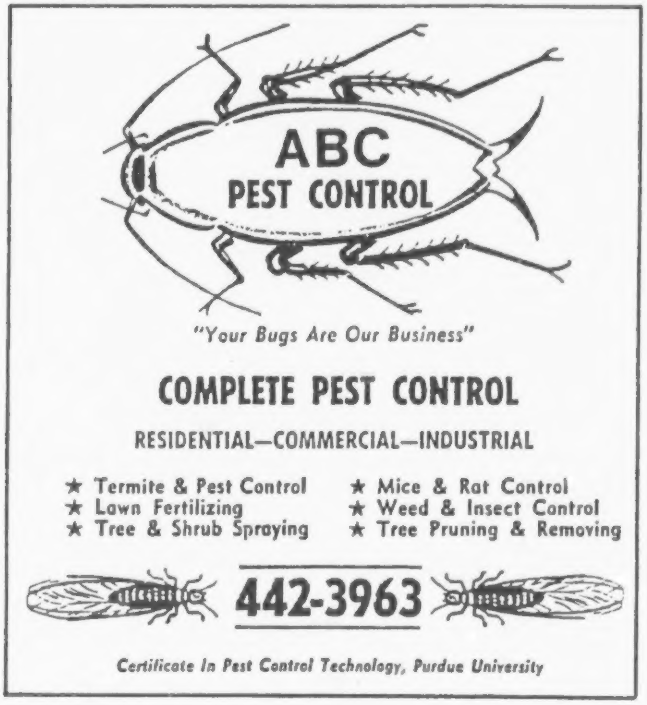
Project 1 Divide the students into groups of four or five to prepare a portfolio. Have them look in magazines, newpapers, and other printed materials and gather examples to put in folders or a notebook. Information should be split into sections by type and each should be labeled.

Competency Test

Part II

Project 2 Provide the students with information about special events occurring in your community such as a recycling contest, fund raising marathon, parade, etc. The students can begin their project outside of class and then turn in the thumbnail sketch.

Types of Balance



ABC
PEST CONTROL

"Your Bugs Are Our Business"

COMPLETE PEST CONTROL

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★ Termite & Pest Control
★ Lawn Fertilizing
★ Tree & Shrub Spraying
★ Mice & Rat Control
★ Weed & Insect Control
★ Tree Pruning & Removing

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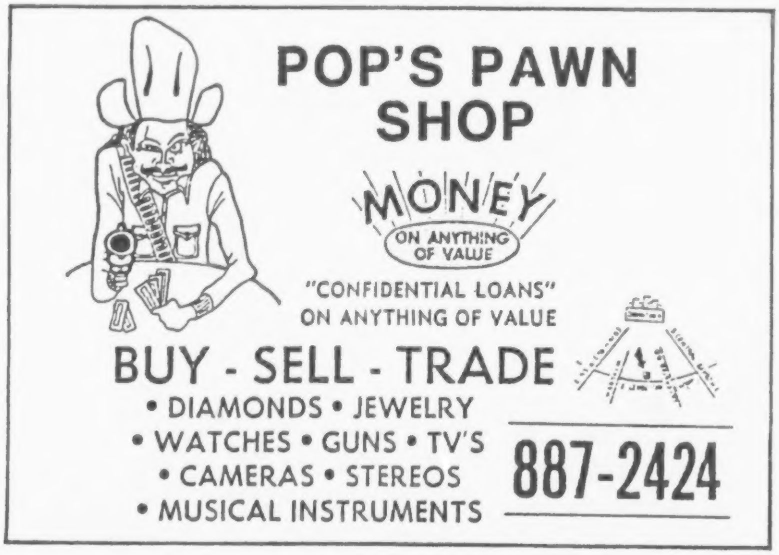
Certificate In Pest Control Technology, Purdue University

Formal



POP'S PAWN SHOP

MONEY
ON ANYTHING OF VALUE

"CONFIDENTIAL LOANS"
ON ANYTHING OF VALUE

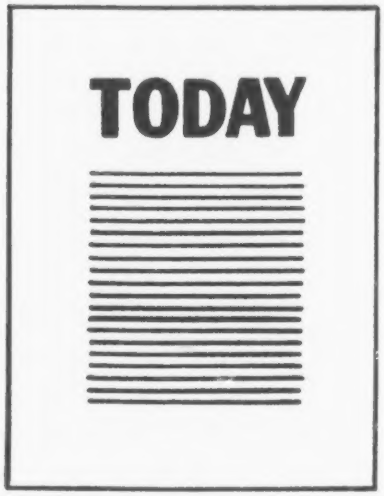
BUY - SELL - TRADE

- DIAMONDS • JEWELRY
- WATCHES • GUNS • TV'S
- CAMERAS • STEREOS
- MUSICAL INSTRUMENTS

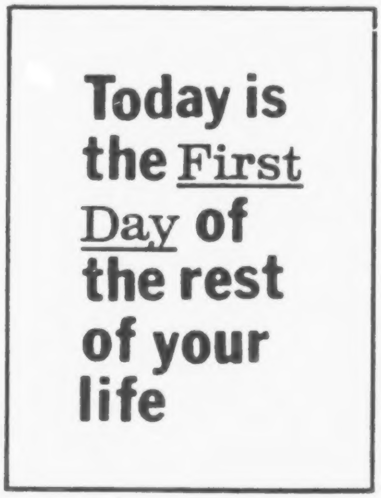
887-2424

Informal

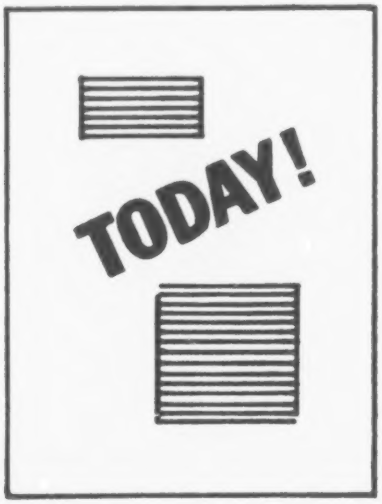
Methods Used to Achieve Emphasis



Emphasis by Type, Size and Weight


Today is
the First
Day of
the rest
of your
life

Emphasis by Use of Contrasting Type



Emphasis by Arrangement

Matrices

ACTIVITY MATRIX

Activities		Domains			Basic Skills		
		Cognitive	Psycho-motor	Affective	Reading	Writing	Math
1		X				X	
2	Project 1	X	X	X	X	X	
	Project 2	X	X		X	X	X
	Project 3	X	X		X	X	X
3	Project 1	X	X		X	X	X
	Project 2	X	X		X	X	X

COMPETENCY TEST MATRIX

Parts		Domains			Basic Skills		
		Cognitive	Psycho-motor	Affective	Reading	Writing	Math
I		X			X	X	
II	Project 1	X				X	
	Project 2	X	X		X	X	X
III		X	X		X	X	X

Graphic Layout and Design 5-3

Competency Test

PART I: TERMINOLOGY

Fill in the blanks with the appropriate term.

__________________ 1. Arrangement of elements on a page to attract attention to the most important element.

__________________ 2. Spacing between lines of type.

__________________ 3. A unit of measure for sizing printer's type; there are 72 points to 1 inch or 12 points to 1 pica.

__________________ 4. A light line or stroke extending from the main stroke in a letter.

__________________ 5. Relating the style of type to the message.

__________________ 6. The layout in final camera-ready copy (or ready for copies to be made if camera is not used).

__________________ 7. The part of a lowercase letter above the height of a lowercase x, such as the upper parts of h, d, or b.

__________________ 8. A set of characters with the same typeface, type size, and weight.

__________________ 9. A layout drawn to actual size with the fine points not included.

__________________ 10. The beginning ideas of layouts done on a small scale to aid in selection of best arrangement.

5-3 Graphic Layout and Design

Competency Test

PART II: CREATING A THUMBNAIL SKETCH

Project 1

List and discuss four guidelines used when planning a design.

1.

2.

3.

4.

Project 2

You have been asked to design a one-page flyer for an event occurring in your community. The flyer must "get attention" from the community. Prepare a thumbnail sketch.

PART III: ROUGH PAGE LAYOUT

Using the thumbnail sketch created in *Part II, Project 2*, prepare your rough page layout.

Activity Answers

Activity 1

1.	**Balance**	Arranging the characters on a page in a pleasing way.
2.	**Emphasis**	Arrangement of elements on a page to attract attention to the most important element.
3.	**Serif**	A light line or stroke extending from the main stroke in a letter.
4.	**Font**	A set of characters with the same typeface, type size, and weight.
5.	**Leading**	Spacing between letters or between lines of type, measured in points from the baseline of one line of type to the baseline of the next line.
6.	**Kerning**	The process of reducing white space between certain combinations of type characters to tighten fit and improve appearance.
7.	**Comprehensive layout**	The layout in final camera-ready copy (or ready for copying if camera is not used).
8.	**Thumbnail sketch**	The beginning ideas of layouts done on a small scale to aid in selection of best arrangement.
9.	**Layout**	The way text and graphics are placed on a page.
10.	**Pica**	A unit of measure for sizing printer's type; there are 6 picas to 1 inch.

Activity 2

Projects 1-2 Evaluated to the satisfaction of the instructor.

Activity 3

Projects 1-2 Evaluated to the satisfaction of the instructor.

Competency Test Answers

Part I

1. Emphasis
2. Leading
3. Point
4. Serif
5. Tone
6. Comprehensive layout
7. Ascender
8. Font
9. Rough draft
10. Thumbnail sketch

Part II

Project 1 Evaluated to the satisfaction of the instructor. Any four of the following can be used.

1. **Purpose**—what action do you want the reader to take?
2. **Content**—what information is to be communicated?
3. **Character**—what mood is to be created?
4. **Form**—how should the message be displayed?
5. **Audience**—who will see the message?
6. **Distribution**—where will this message be seen?
7. **Budget**—how much money can be spent for the project?

Project 2 Evaluated to the satisfaction of the instructor.

Part III

Evaluated to the satisfaction of the instructor.

Lesson Plan

Essential Element: 75.87 (j)(5)(C)
Allocated Time: 5/10 Hours

Unit Objective: Students will understand terms, describe components, and discuss concepts associated with desktop publishing, and put together a simple publication using desktop publishing procedures.

Student Competencies: After completing this unit, the student will be able to:

1. Identify and use desktop publishing terminology.
2. Describe the components of a desktop publishing system.
3. Discuss the concepts of desktop publishing.
4. Demonstrate desktop publishing tools and procedures for producing a simple publication.

Focus: Documents produced in the office using desktop publishing are often indistinguishable from commercially published materials. The ability to perform desktop publishing skills increases entry-level employability.

Domains: Activities and competency tests provide learning experiences within the cognitive, psychomotor, or affective domains and are coded on the Activity and Competency Test Matrices.

Basic Skills: Activities and competency tests reinforce the basic skills of reading, writing, and mathematics and are coded on the Activity and Competency Test Matrices.

5-4 Desktop Publishing

Content Outline

Desktop publishing overview

The primary goal
One person process

Desktop publishing components

Hardware
Software

Operational procedures

Document creation
Printing

385

Teacher Activities

Teacher Preparation

- ☐ Preview the unit.
- ☐ Review unit objectives.
- ☐ Make instructional analysis.
- ☐ Assess student learning needs.
- ☐ Decide on lesson domain: cognitive, psychomotor, or affective domain.
- ☐ Select instructional materials based on instructional analysis and student learning needs.
- ☐ Select instructional strategies based on lesson content and student learning needs.
- ☐ Prepare lesson plans from the unit lesson.
- ☐ Prepare additional instructional material.
- ☐ Reserve necessary media and equipment.

Teacher Presentation

- ☐ Present student objectives.
- ☐ Establish rapport with students.
- ☐ Review lesson objectives with students.
- ☐ Relate lesson to prior or future learning.
- ☐ When appropriate, encourage student interaction through questioning, discussions, or some other strategy.
- ☐ Emphasize the value/importance of the unit or activity.
- ☐ Allow time for closure of a lesson.

Reteach Activities

- ☐ Identify area(s) of weakness from results of evaluation.
- ☐ Select unit activities not previously used.
- ☐ Use additional resources and/or create materials based on student learning needs.
- ☐ Use a different teaching strategy in reteaching.
- ☐ Retest.

Specific Teaching Activities

NOTE: *Unit 3, Graphic Layout and Design, should be taught first since some of its activities must be performed before doing desktop publishing.*

- ☐ Become familiar with the software to be used—word processing, graphics, desktop publishing. Make sure they are all compatible.

- ☐ Collect samples of brochures, catalogs, and reports that were, or could have been, produced by desktop publishing.

- ☐ Examine the terms listed in this unit and add any additional terms that are needed for working with your particular software. Prepare a lecture on the characteristics and terminology of the publishing industry.

- ☐ Compile a list of possible class, individual, or school-wide projects that might be used. This list can be expanded with suggestions from students during class discussions. Use these suggestions for Activity 4 and Parts 3 and 4 of the Competency Test.

- ☐ Determine the steps in putting together a simple publication.

- ☐ Arrange to tour a traditional print shop to see the printing steps.

- ☐ Plan a visit to an office where extensive desktop publishing is done.

- ☐ The simulation, *Office Greenery, Inc.*, should be used at the end of this unit. You may wish to use this simulation as a culmination or test of the section, or at the closure of the course. If no other office education courses are being taught at your school, you may wish to purchase additional simulations for the other courses. Please refer to the special products pages at the front of this guide.

- ☐ Remember to use the *Test Builder Program* and the related Test Bank. Refer to Appendix D for the *MAP Test Bank* question revisions for Section 5, Unit 4.

Activity 4

Projects 1-2 Provide the students with the rough drafts they created in Unit 3, *Graphic Layout and Design*. The students will be completing their projects.

Competency Test

Part IV Provide the students with the rough drafts they created in Unit 3, *Graphic Layout and Design*. The students will be completing their projects. This part of the competency test must be camera-ready and the final product could actually be used in the community to give the students an incentive.

Matrices

ACTIVITY MATRIX

Activities	Domains			Basic Skills		
	Cognitive	Psycho-motor	Affective	Reading	Writing	Math
1	X			X	X	
2	X				X	
3	X				X	
4 Project 1	X	X		X	X	X
Project 2	X	X		X	X	X

COMPETENCY TEST MATRIX

Parts	Domains			Basic Skills		
	Cognitive	Psycho-motor	Affective	Reading	Writing	Math
I	X			X	X	
II	X			X	X	
II	X			X	X	
IV	X	X		X	X	X

Desktop Publishing 5-4

Competency Test

PART I: DESKTOP PUBLISHING TERMINOLOGY

Fill in the blanks with the appropriate terms.

____________________ 1. Cutting off parts of an image or drawing to make it fit or to only show selected areas.

____________________ 2. The size, shape, form, proportions, margins, and overall design of a printed item.

____________________ 3. Adjusting the spacing between certain letters to make more efficient use of space and improve appearance.

____________________ 4. Printer language that provides a great assortment of font styles for any software program.

____________________ 5. A complete set of characters in a particular design or style.

____________________ 6. The blank or unused portions of a page.

____________________ 7. Normal, bold, italic, underline, outline, shadow, etc.

____________________ 8. An acronym for "What you see is what you get."

____________________ 9. Function that determines position of type—left, right, centered, justified.

____________________ 10. Small black dots or other characters used to call attention to a portion of text, usually specific points or lists.

____________________ 11. Final copy of text and illustrations (comprehensive layout) ready to be photographed by the printer for reproduction.

____________________ 12. Computer Aided Design refers to software that is valuable in doing drawings or designs.

____________________ 13. An area of memory that is used for saving portions of work that will be placed elsewhere later.

____________________ 14. A collection of handy drawings stored on disk that can be inserted into a document.

5-4 Desktop Publishing

Competency Test

PART II: COMPONENTS OF DESKTOP PUBLISHING

Describe the components of a desktop publishing system.

Competency Test

PART III: CONCEPTS OF DESKTOP PUBLISHING

Using the information provided in this unit and any additional information provided by your instructor, discuss the concepts of desktop publishing using both a dedicated desktop publishing program and a word processing program.

5-4 Desktop Publishing

Competency Test

PART IV: DESKTOP PUBLISHING PROJECT

Using the rough page layout you designed in the *Graphic Layout and Design* Competency Test, use desktop publishing skills to complete a comprehensive layout that is camera ready. The community flyer needs to be "attention-getting" and should follow the guidelines of graphic layout and design.

Activity Answers

Activity 1

```
              C A D                       K
P I C A       R               I M A G E
D   A     B   O   M                   L   R
L   M     I   P   O         W         I   N
  D E S K T O P P U B L I S H I N G   I
    R     M   I   S         I     N   N
L   A     A   N   E         T     M   G
A   R     P   G             E     E
S   E     P     S   T       S     N
E   A     E     T   Y       P A S T E
R   D     D     Y   P       A     .
P   Y           L   E       C
R               E   F       E
I   G U T T E R S P A C E
N               H   C ·     F
T Y P E S T Y L E   E     P O I N T
E   A           E           N
R   G     P O S T S C R I P T
    E     U                 S
          B U L L E T S
```

Activity 2 Description of the desktop publishing components evaluated to the satisfaction of the instructor. Components must include:

Computer
Monitor
Printer
Mouse
Scanner
Software—three major types (word processing, graphics, page composition)

Activity 3 Definition and description of desktop publishing concepts evaluated to the satisfaction of the instructor.

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Activity 4

Projects 1-2 Evaluated to the satisfaction of the instructor.

Competency Test Answers

Part I

1. Cropping
2. Fonts
3. Kerning
4. Postscript
5. Typeface
6. White space
7. Typestyle
8. WYSIWYG
9. Alignment
10. Bullets
11. Camera-ready
12. CAD
13. Clipboard
14. Clip art

Part II

Description of the desktop publishing components evaluated to the satisfaction of the instructor. Components must include:

Computer
Monitor
Printer
Mouse
Scanner
Software—three major types (word processing, graphics, and page composition)

Part III

Evaluated to the satisfaction of the instructor.

Part IV

Evaluated to the satisfaction of the instructor.

SECTION 5

Information Processing Tools

Unit 1: Telecommunications

Unit Objective: Students will gain an understanding of the concepts of exchanging data through telecommunications, including electronic mail, bulletin boards, on-line information services, and facsimile transmissions.

Student Competencies: After completing this unit, the student will be able to:

1. Use terminology common to telecommunications.
2. Describe procedures for communicating with electronic bulletin boards, on-line information services, and facsimile transmissions.
3. Explain the concept of electronic mail.

Focus: Telecommunications is growing in importance within the business world. Information can be received and sent in a few moments rather than a few days. Having timely information increases accuracy and productivity; therefore, all personnel need to know basic telecommunications skills.

Telecommunications 5-1

Terminology

Acoustic coupler	A type of modem which uses a telephone handset to connect the phone line to the computer.
Analog signal	The kind of electronic signal used in telephone line transmission.
Baud rate	A measure of the number of bits per second transmitted.
Bulletin board	A computer with software and storage dedicated to communicating with other computers over telephone lines.
Channel	The connection between the sender and the receiver.
Demodulation	Conversion of a signal from analog to digital.
Digital signal	The electronic pulses produced and recognized by a computer.
Download	To receive a data file from another computer.
E-mail	The transmission of data for electronic storage and retrieval.
Fiber optics	A means of transmission using glass fiber.
Full duplex	A communication protocol which enables transmission of data two-ways at the same time.
Half duplex	A communication protocol which allows transmission in only one direction at a time.
Handshaking	A process in which the receiving computer sends a signal to tell the sending computer that it is ready to receive data.
Hard-wired	Two computers or devices are connected by wire rather than phone lines.
Leased lines	A telephone line that is reserved for use by a computer or user.

Microwave transmission	A channel for sending data by microwaves using a series of relay stations.
Modem	Short for modulator-demodulator. It connects the computer to the telephone system.
Modulation	Conversion of a signal from digital to analog.
Multi-drop line	A communication line that connects several computers.
Parity	A method of verifying the accuracy of data that is transmitted by means of an extra "parity bit."
Password	Coded identification required to access some bulletin boards and information services.
Protocol	A set of rules in a communication system for exchange of information between computers.
Satellite transmission	Transmission using communication satellites.
Serial	A data transfer format in which data is sent one bit after another.
Switched line	A line such as a normal telephone line.
Terminal	An input-output device that is used to access data from a computer.
Upload	To send a data file from one computer to another.

Unit Overview

Concepts of data communications

Telecommunication refers to any form of electronic communication using telephone lines or other vehicles such as microwave transmission. Data communication is the computer terminology for using computers to send and receive information. Generally, this communication is done over telephone lines.

☐ **System requirements**—for two computers to communicate with each other, a number of elements must be present.

▲ Computer or terminal

Any microcomputer is capable of being used in data communications. It is possible to make a connection without purchasing special software, but it is inconvenient and requires advanced knowledge. There are several programs available for most of the popular microcomputers that make data communication easy. Generally, information appears on the screen to guide the user through the procedures.

▲ Modem or MOdulator-DEModulator

A modem is an electronic device that converts the digital pulses produced by the computer as coded data into analog information. The coded data can then be sent over standard telephone lines, in much the same way as a voice is sent. The information received from the sending computer is converted from the analog signal to the original digital signal which the receiving computer can interpret.

Types of modems

- Acoustic coupler modem
  - Used during the early days of microcomputers. Consists of a circuit board in the computer which sends data serially—one bit at a time—connected to an external device that is shaped to fit the handset of any telephone. This circuit board is the same type of board that is used to connect a serial printer to a computer.
  - The signals produced by the computer are then converted by the modem into tones which are sent through the telephone's microphone. The telephone hears the tone made by the analog signals coming in, and the modem

        then converts them into digital signals. A user can hear the tones though the receiver.

    - Operates at 300 bits per second (this refers to the baud rate).
- Direct-connect modem
    - This type of modem is faster and more reliable than the acoustic modem. It can be located either internally or externally. It is connected directly to the phone line, so it does not use a handset.
    - Can operate at a baud rate of 1200, 2400, or 3600 bits per second.

Communication protocol

- Both computers must be equipped with a modem that follows the same protocol or specifications for sending and receiving data to communicate.
    - This means that both must send/receive at the same baud rate (bits per second) and observe the same parity.
    - Parity refers to a method for checking the accuracy of data by comparing the number of bits at both the sending and receiving ends.
    - With even parity, the number of bits should always be even; with odd parity, all must be odd.
- The modem connection can be "full duplex," meaning data can be transmitted in both directions at the same time, or it can be "half duplex," meaning that data can be sent by only one computer at a time.
- Receiving computer
    - The communication is complete when the computer at the other end receives the demodulated data.
    - No connection takes place unless all components are present, and both computers are on-line, just as in an ordinary telephone conversation.
    - The receiving computer's software causes the decoded data to be displayed on the screen or directed to disk storage for later access.

▲ Channels

- The channel used most often is the standard telephone line.

- Commercial systems use a variety of other channels such as microwave or satellite transmission. These systems beam signals from one point to another in the same way that radio or television signals are transmitted, but at different frequencies.
    - Microwave transmitters use relay stations called repeaters to retransmit signals from one antenna tower to the next because direct microwave transmission distances are limited.
    - Satellites that circle the earth can beam signals long distances.
- Fiber optics are another channel. These are special telephone lines through which a laser-generated light sends signals.

☐ Data communication procedures

Once a connection is made, the software being used determines what happens to the data. The computer system is started up with the modem in place and connected to a telephone line. A communications software program is executed. When ready, the destination number is dialed using pushbuttons on the phone or the computer keyboard. If the receiving station is on-line, it will generate a tone (equivalent to saying "hello") which is recognized by the modem, and the communication link is established. What happens next depends upon the nature of the software.

Types of communication services

It is possible for individuals using microcomputers to "talk to" a friend or other user much like a spoken phone conversation. The difference is that the words are seen on the computer's monitor instead of being heard. There are several types of communication services.

☐ **Electronic bulletin board systems (BBS)**—these systems get their name because users can post announcements and messages that are then available for others to read, use, and answer. The bulletin board is really just disk storage with a special program that manages the data. A computer user who calls the number of the bulletin board computer can access the software and choose options from a menu. A BBS is considered a specialized form of electronic mail service.

▲ Bulletin board owners

User groups, organizations of computer users, run many of the available bulletin boards. Others are owned by computer stores, special interest groups, or even individuals. Some of the larger clubs have bulletin boards with several phone lines.

- Topics

  A typical BBS will offer a menu of varied topics ranging from technical help and software updates to public domain software and games. Most will also have news, events, or messages of interest to members.

- Access and membership
  - Access to user group BBSs are often free, but one must become a member in order to upload and download files or to access certain areas (files) from the menu. In some cases only members of the user group are eligible to join the bulletin board.
  - Some systems require a fee to join.
  - Membership in a BBS means having an account number and/or password which must be used at log-on time (when beginning a session).

☐ **On-line information services**—these services offer massive amounts of information to microcomputer users. They operate from mainframes with extensive, high speed disk storage.

- Examples
  - Compuserve is probably the best known of the services because membership can be purchased as a package at most computer retail stores at a nominal cost. A wide variety of information is accessible.
  - The Source is one of the earliest of these services, and it offers categories of information similar to those offered by Compuserve.
  - Star-text is an excellent news service sponsored by the *Fort Worth Star-Telegram.*
  - Texas Education NETwork (TENET) allows communication with educators and students all over the world.
- Topics
  - **News**—current events, features, or anything found in the daily paper.
  - **Stock market information**—up-to-the minute prices from the New York Stock Exchange.
  - **Research material**—somewhat like a library; information on various topics.
  - **Public domain software**—these programs can be downloaded to the member's own computer.
  - **Announcements and messages**—similar to the services on some bulletin boards.

- ▲ Membership costs

  The fee for subscribing varies among the services. There is an additional charge for access time, usually figured in portions of hours. Some services have a minimum monthly fee which is paid even if there is no usage. Because of the cost of access time it pays to have a fast modem.

☐ **Voice messaging or voice mail**—was developed as a new "toy" in the office. However, voice mail surprised everyone with its usefulness. In the early 1980s, voice mail was limited to a type of answering machine which could be accessed for any messages left. The messages were stored digitally in the memory of a dedicated computer system. Voice mail is best suited to the rapid exchange of brief messages.

- ▲ An advantage of using voice mail instead of E-mail is that the user only needs a push-button phone to access the system.
- ▲ A disadvantage of using voice mail instead of E-mail is that there is no permanent written record of the message, unless it is separately transcribed.
- ▲ Some significant advances include:
  - Voice messaging software has matured.
  - The cost of the processors and other hardware has decreased.
  - Information storage cost has decreased.
  - It takes less memory to store greater amounts of digitized voice.
  - Integration of voice mail functions with private branch exchanges has added telephone answering, call forwarding, and message waiting notification capabilities. Having this integration allows for more sophisticated and dedicated equipment to be added.
- ▲ Hardware requirements
  - Businesses with five to ten telephones need at least a PC XT (20MG hard disk) with a voice data board. This system will answer a call with a standard, impersonal greeting.
  - A dedicated minicomputer is necessary for more powerful voice mail systems.
  - Integration with Centrex or PBX will allow the caller to leave personal messages.
- ▲ Features of voice mail
  - **Edit**—the user can edit sections of a message.
  - **Save**—a message can be saved in memory for future action or for replay.

- **Reply**—one user can reply to a message from another user on the system.
- **Security**—the password provides security and prevents unauthorized access
- **Broadcast**—a message can be spoken once and broadcast to the mailboxes of a number of voice mail system users.
- **Tracking**—some systems will keep track of information, such as the number of messages sent, originators, and recipients.
- **Scan**—messages in the mailbox can be scanned before listening to the entire message.
- **Redirect**—a message can be rerouted to other voice mail system users.
- **Delivery verification**—the system will inform the sender when a voice message has been delivered.

☐ **Facsimile (FAX)**—facsimile transmission is sending images of documents by means of radio waves or telephone lines. The images are stored digitally in the computer's memory. Images can be sent and received using modems. The computer's graphics or laser printer is used for output.

- ▲ A FAX machine is actually a printer, scanner, telephone, and copier combined into one machine. The major component of a FAX machine is a scanner that converts an image into an encoded audio signal. An image is sent over telephone lines to the receiver and is demodulated and impressed on paper by one of several techniques. A FAX machine scans a page in lines. The closeness of the lines determine the resolution which establishes the print quality.
- ▲ The price of FAX machines has made them attractive to small businesses and individual users. Some now plug directly into a microcomputer.
- ▲ Standard features and capabilities of facsimile machines include telephone functions that have speed and memory dialing, delayed and automatic redial, storage, broadcasting, answering, and polling.
- ▲ FAX machines generally have the same basic steps for operation: dialing the number, listening for the tone, and starting the transmission. A cover sheet should be the first page of the transmission. The person to receive the FAX, the person sending the FAX, the number of pages, the business letterhead or logo, and a phone number of the sender should all be included on a cover sheet.

Electronic mail concepts (E-mail)

E-mail is the electronic transmission and storage of messages from the sender to the receiver. Using E-mail does not require the concurrent presence of both the sender and the receiver. Information can be viewed at the receiver's convenience. Many bulletin boards and on-line information services offer some E-mail features. Access to E-mail systems is similar to the other services, and it is available on a subscription basis.

☐ Using E-mail

- ▲ Advantages of using E-mail
    - Messages can be delivered at a set time.
    - Cuts communication time from days to minutes.
    - Can permanently store and recall messages.
    - Each member has a "mailbox" in which others can leave messages that will remain until the owner chooses to erase them.
    - People who travel can access their E-mail from any terminal.
    - Messages can also be stored and forwarded to a computer at another location.
- ▲ Forms of electronic mail
    - A telegram is the oldest type of electronic mail. Samuel Morse developed the telegraph in 1835.
    - Mailgrams are messages that are transmitted to the local post office from Western Union and then printed. The mailgram is delivered the next day with the regular mail.
    - Telex/TWX are operated by the Western Union Telegraph Company. They are similar to the conventional telephone network, but they use teleprinters and hardcopy output instead of telephones and voice communication.
    - Communicating word processors expand E-mail's capability. They simplify composing and editing messages.
    - Computer hardware- and software-based systems are used in the preparation, transmission, storage, and retrieval of messages.
- ▲ Some considerations in deciding on which form of E-mail to use include length of the message, volume of usage, speed of transmission, and form of response needed.

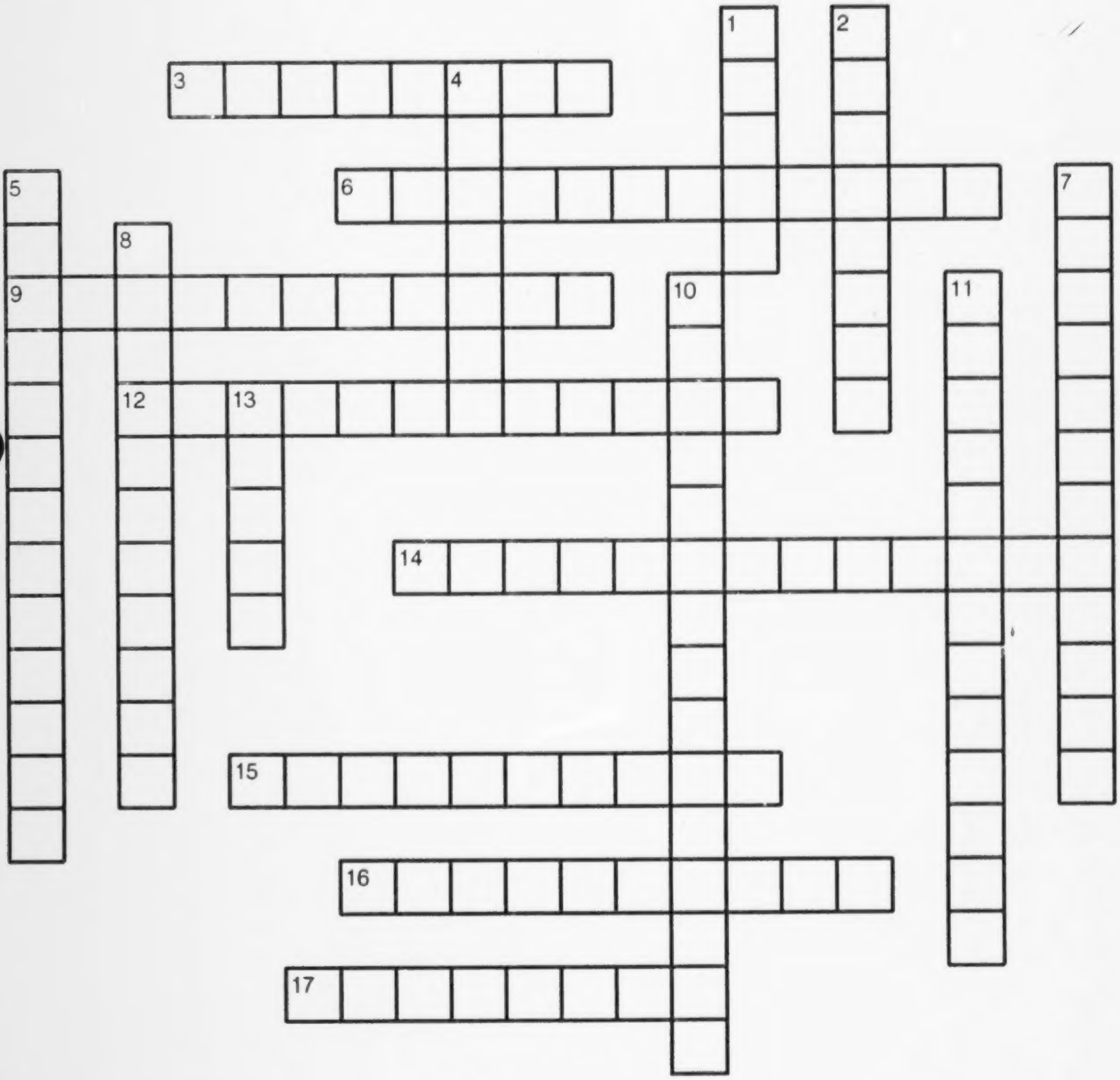
- ▲ A user can enlist a third-party service bureau to create and maintain his/her electronic mailbox on disk. The user then accesses the mail by providing the proper identification at his/her own computer.

☐ Importance and future of telecommunications

Planners and forecasters believe we have just scratched the surface in the use of telecommunications. More hobbyists and personal computer users are discovering the convenience and fun of bulletin boards and the wealth of information at their fingertips through information services. Communication services are not yet an indispensable part of most lives. Many forecasters predict that we will soon pay our bills by phone, check our computers for messages wherever we go, and receive most of our education at home in front of a computer.

- ▲ The IRS is currently using telecommunications to help speed-up the process of filing taxes. Some forecasters predict that this method of filing taxes will become the common practice.
- ▲ Businesses worldwide are depending upon telecommunications to rapidly send and receive information daily.

ACTIVITY 1: TERMINOLOGY CROSSWORD PUZZLE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ACTIVITY 1: TERMINOLOGY CROSSWORD PUZZLE CLUES

ACROSS

3. A set of rules in a communication system for exchange of information between computers.
6. The kind of electronic signal used in telephone line transmission.
9. A telephone line that is reserved for use by a computer or user.
12. Conversion of a signal from analog to digital.
14. A computer with software and storage dedicated to communicating with other computers over telephone lines.
15. Conversion of a signal from digital to analog.
16. A communication protocol which enables transmission of data two-ways at the same time.
17. A measure of the number of bits per second transmitted.

DOWN

1. The transmission of data for electronic storage and retrieval.
2. To receive a data file from another computer.
4. The connection between the sender and the receiver.
5. A communication line that connects several computers.
7. A line such as a normal telephone line.
8. A process in which the receiving computer sends a signal to tell the sending computer that it is ready to receive data.
10. A type of modem which uses a telephone handset to connect the phone line to the computer.
11. The electronic pulses produced and recognized by a computer.
13. Short for modulator-demodulator, it connects the computer to the telephone system.

ACTIVITY 2: BULLETIN BOARDS AND ON-LINE INFORMATION SERVICES

Project 1

Working in pairs, go to the library and make a list of the local BBSs in your area and the types of services they provide. Use newspapers, magazines, etc.

Project 2

Use either a simulation or a communications system to contact a local BBS to upload and download information specified by your instructor.

Project 3

Write a paragraph about voice mail. Use at least three examples of voice mail features.

Project 4

Working in a group, design a FAX cover sheet. After completing the cover sheet, use the document provided by your instructor to send a FAX.

ACTIVITY 3: CONCEPTS OF ELECTRONIC MAIL

Project 1

Discuss three forms of electronic mail.

1.

2.

3.

Project 2

List four advantages of using E-mail.

1.

2.

3.

4.

SECTION 5

Information Processing Tools

Unit 2: Networking

Unit Objective:

Students will use terminology related to networking and discuss network configurations, components, advantages, and disadvantages.

Student Objectives:

After completing this unit, the student will be able to:

1. Use terminology associated with networking.
2. Identify configurations for local area networks.
3. Describe components common to networks.
4. Discuss advantages and disadvantages of networking.

Focus:

Using networks allows you to send and receive information faster than traditional methods of exchanging information. All potential employees and those already in business should have basic knowledge about networks.

5-2 Networking

Terminology

Common carrier	An organization, such as the telephone company, authorized by the FCC to offer communication services.
Distributed data processing	A system that has a central computer, but some processing is done at remote sites.
File server	The host computer in a network that coordinates communication and has central storage capability available to the network.
Front end processor	A computer connected to a mainframe for the purpose of controlling (terminal controller) data input and output.
Host computer	The file server in a local network, or the mainframe in other networks.
LAN	An acronym for Local Area Network; a network that is limited to one room, building, or complex.
Multiplexing	Messages from several low-speed sources combined onto one high-speed line.
Multistar	A network configuration in which mainframes, each with its own star network, are connected.
Polling	The line is controlled by the host computer asking each terminal, in turn, if it has a message to send.
Ring	A local area network in which the workstations are connected to each other, but without a central host.
Slave computer	The host or file server when it is used only for coordinating the network.
Star	A network configuration in which a central computer is directly connected to each terminal.

Token ring	A type of ring network in which messages need not pass to adjacent stations.
UNIX	A popular operating system for microcomputers used in a multistation configuration.

Unit Overview

Network concepts

Networking is the joining of two or more computers for the purpose of sharing information or peripherals. This is accomplished through some form of cabling, such as telephone wire, fiber optic cable, or other mechanism.

☐ Network configurations

- ▲ **LANs** (Local Area Networks) are used in offices. Terminals should be located in close proximity because all the terminals on the network are connected by cable.
- ▲ **Star** network has clusters of personal computers in a star shape around a central network server. The terminals work from one main computer and can communicate with each other.
- ▲ **Ring** network connects components in a single, closed loop in which information moves clockwise. If one terminal is down, all terminals are down.
- ▲ **Tree (bus)** network is a single bidirectional communication link in which information moves sequentially. All terminals can send and receive information.

☐ Common components

- ▲ **File server**—a computer used like an electronic file cabinet. It allows users to access and share the same storage area.
  - The host computer contains the network software, and storage is available to all the stations on the network.
  - Files can be quickly saved, and data can be transferred between files within this "file cabinet."
  - Software is obtained from the file server; however, floppy drives should still be installed at each computer so outside information can be shared.
  - Some network file servers are dedicated only to serving the network and are called slave computers. In other networks the server can do other processing while the network is in use.

- **Workstations**—the microcomputers or terminals that are connected to the network and can share information through it.
- **Network hardware**—each workstation has a circuit board that provides the interface hardware and firmware to establish the communication link.
- **Channel**—with local area networks, cables usually join the stations together. It depends on the specific application whether twisted pair cables, coaxial cables, phone lines, fiber optic cables, or other cables are used.
- **Software**—programs written specifically to coordinate the network hardware with the operating systems of the computers for ease and convenience of the users. Networking software controls the file server and acts as a communications "traffic cop." Record locking is used so that only one person at a time can modify a file. Security is determined by the network software.

Purposes of networks

- The purpose of networking and any multi-user system is sharing information and distributing work. The way in which this is accomplished varies according to the type of equipment being used, the geographical distribution, and the kinds of work being done.
  - In distributed data processing, an organization might have one large central computer with files that will be accessed and updated by stations throughout the region.
    - For greater efficiency, work that does not require on-line access of the master files can be done at the remote sites.
    - Sometimes each of several computers in the system is assigned some of the central work.
  - With a local area network, workers in each office in a building can access certain files as needed without having to leave their desks. Messages can be sent from one workstation to another. Each computer can be used as a stand-alone computer, and users only log onto the network when needed.

Network setup

- Setting up a network is a job for trained professionals. Most large systems require custom installation to meet the needs of the organization. Those doing the work must have a technical understanding of the hardware, the operating system, and the network software.

- There are network boards and software, packaged with installation instructions, that cost only a few hundred dollars for up to four microcomputers. Since these come with no technical support, the user should be prepared to experiment and should try to find someone who has been through the process.
- Once a network is installed, starting up a session is not too different from logging onto a bulletin board or information service.

Using a network

Most network information exchanges follow the same basic procedures. They range from simple to complex systems.

- ☐ LANs are linked together with coaxial cables or another form of channel and are located in close proximity to the other terminals.
  - ▲ The file server allows access to the software and public files.
  - ▲ Each terminal user can access the program needed.
  - ▲ After the user has completed the work, information is sent back to the file server so someone else can use the information without asking for a hardcopy or a copy of the disk.
- ☐ Larger networks link a minicomputer or a mainframe with a series of individual computers. These larger computers link to other large computers through the use of telephone lines, fiber optics, satellites, etc.
  - ▲ Information sent from a terminal must be coded through the multiplexer and the modem before entering the channel.
  - ▲ As information flows through the channel and is accepted by the receiving modem and multiplexer, it is transferred to the front-end processor which controls the input.
  - ▲ When the information is received by the mini or mainframe computer, it is stored for later use by a single workstation or another network.

Network advantages and disadvantages

Arguments for and against use of networks can be made.

☐ Advantages

- ▲ Data files can be accessed and shared.
- ▲ Messages from others on the network can be sent and received.
- ▲ Backup computers are available when needed. The crisis that could occur when a computer "goes down" is avoided when another microcomputer can access the file server or other stations.

☐ Disadvantages

- ▲ Selecting, installing, and managing the network hardware and software is costly and difficult.
- ▲ Dependency on the central files without adequate backup can cause loss of data and costly and lengthy recovery. If the file server is down, then the whole network is down.

ACTIVITY 1: TERMINOLOGY

Define the following terms.

1. Host computer
2. Common carrier
3. File server
4. Ring
5. Polling
6. Token ring
7. Multistar
8. Front end processor
9. LAN
10. Slave computer
11. Star
12. Multiplexing

5-2 Networking

Activities

ACTIVITY 2: NETWORK CONFIGURATIONS

Draw diagrams of the three network configurations.

ACTIVITY 3: NETWORK COMPONENTS

Describe the following network components and explain how each works in the network.

1. File server

2. Workstations

3. Channel

4. Software

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5-2 Networking

Activities

ACTIVITY 4: ADVANTAGES AND DISADVANTAGES OF NETWORKING

List two advantages and two disadvantages of networking.

Advantages

1.

2.

Disadvantages

1.

2.

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SECTION 5

Information Processing Tools

Unit 3: Graphic Layout and Design

Unit Objective: Students will apply basic graphic design techniques when creating thumbnail and rough sketches of a page layout.

Student Competencies: The student will be provided opportunities to:

1. Identify terminology related to layout and design.
2. Use graphic layout and design techniques to prepare a thumbnail sketch.
3. Create a rough page layout.

Focus: A basic knowledge of graphic layout and design techniques is essential for producing top-quality desktop publishing documents. These skills will enhance the beginning office worker's chance for advancement.

Terminology

Ascender	The part of a lowercase letter above the height of a lowercase x, such as the upper parts of h, d, or b.
Balance	Arranging text and graphics on a page in a pleasing way.
Base line	The line of writing on which the main part of the letters rest.
Comprehensive layout	The layout in final camera ready copy (or ready for copies to be made if camera is not used).
Descender	The part of a letter below the base line.
Emphasis	Arrangement of elements on a page to attract attention to the most important element.
Font	A set of characters with the same typeface, type size, and weight.
Kerning	The process of reducing white space between certain combinations of type characters to tighten fit and improve appearance.
Layout	The way text and graphics are placed on a page.
Leading	Spacing between lines of type, measured in points from the baseline of one line of type to the baseline of the next line.
Optical center	Point at which a reader's eye naturally rests when it first encounters a page.
Pica	A unit of measure for sizing printer's type; there are 6 picas to 1 inch.
Point	A unit of measure for sizing printer's type; there are 72 points to 1 inch or 12 points to 1 pica.
Rough draft	A layout drawn to actual size with the fine points not included.

Serif	A light line or stroke extending from the main stroke in a letter.
Spacing	Arranging words or letters at proper intervals.
Thumbnail sketch	The beginning ideas of layouts done on a small scale to aid in selection of best arrangement.
Tone	Relating the style of type to the message.

Unit Overview

Planning a design

Readers are bombarded with hundreds of documents daily, and document designers must compete for their attention. The designer must capture their attention long enough to get the desired message across.

☐ Planning a design includes the following guidelines:

- ▲ **Purpose**—what action do you want the reader to take? Is the purpose to persuade the reader to change his/her mind, inform the reader of an upcoming event, entice the reader to buy a product, or simply entertain the reader.
- ▲ **Content**—what information is to be communicated?
- ▲ **Character**—what mood is to be created?
- ▲ **Form**—how will the message be displayed?
- ▲ **Audience**—who will see the message?
- ▲ **Distribution**—where will this message be seen?
- ▲ **Budget**—how much money can be spent for the project, including printing and distribution costs?

☐ Selecting the right document

- ▲ **Brochures**—announce an event or a series of items such as plays at a particular theater, a concert series, or even the details of a specific vacation or city.
- ▲ **Newsletters**—contain multi-columns and information vital to an organization, company, or group.
- ▲ **One-page flyers**—convey one message in just a few words and are designed for mass distribution at a meeting, concert, or sporting event.
- ▲ **Presentation graphics**—used in business to translate complex information into easy-to-understand charts and graphs.

☐ Pleasing balance and emphasis help grab the reader's attention.

- ▲ **Balance**—arranging text and graphics on a page in a pleasing way.
- ▲ **Emphasis**—arrangement of elements on a page to attract attention to the most important element.
  - Optical center—point at which a reader's eye naturally rests when it first encounters a printed page. The optical center of a design is not a true mathematical center of a page, but rather ⅖ of the way down a page that has been divided into five equal parts. Important design elements are placed at or above the optical center of a page for an aesthetically pleasing design.

Creating the page layout

The arrangement of graphics and text should guide the reader through the document and make it easy to read. Devices called graphic elements work together to make a visually appealing document. Limitless layout possibilities exist because of the variety of typeface, illustration, and design options.

☐ Graphic elements

- ▲ **Typography**—the art and technique of working with type elements. Type is one of the strongest graphic elements. The typeface can suggest the tone for the message, whether it is strong, light and airy, or direct and businesslike.
  - **Fonts**—sets of characters with the same typeface, type size, and weight. Fonts can be used to create distinctive visual effects. Too many styles or sizes can create distraction rather than attention. The type sizes should emphasize importance of the text.
    - Serif type has short lines extending from the ends of characters. A serif type is usually used for the body of a document because it is easier to read. The serifs tend to link the letters together so they flow.
    - Sans serif type (sans means without) has no lines extending from the end of characters. A sans serif type is generally used for heads and subheads. This type tends to stand out for easier reading in larger type sizes.
  - **Leading**—the distance between lines of type, measured in points from the baseline of one line of type to the baseline of the next line.
  - **Kerning**—the process of reducing white space between certain combinations of type characters to tighten fit and improve appearance.

- **Widows and orphans**—single lines left at the bottom or top of pages, should be controlled so that the text remains together.
- **White space**—used to create dramatic effects by balancing white space, text, and graphics. There is a fine line between effective use of white space and leaving a hole. Simple ways to use white space in layouts include:
    - Space between lines of type.
    - Space between columns.
    - Space above and below headlines.
    - Space around and inside boxes.
- **Headers and footers**—usually on long documents, such as a business report with presentation graphics, for page numbers and for noting what the page includes.
- **Masthead/nameplate**—newsletters have the company's masthead/nameplate at the top of the first page. The logo design is usually incorporated in the nameplate.
- **Headlines**—balance with the masthead/nameplate. The headlines should stand out, but not conflict with the other items on the page. Headline type should be consistent so the reading flow is not interrupted.
- **Captions or cutlines**—accompany most graphics to explain the information shown. Type used should look different in size or style to help the reader distinguish it from body type.
- Other elements can separate and highlight text and graphics.
    - **Screen tints**—made of fine dot patterns that "tint" an element inside a border or box to offset information from the rest of the text.
    - **Drop shadows**—give dimension to many kinds of graphics. This type of shadowing can be used to focus attention on boxed text or graphics, such as charts, maps, and photographs.

▲ Graphics can convey a message by showing a single picture instead of using a lot of words. Graphics should be used wisely and not clutter a page with unnecessary information.

- Scanning can be helpful because original pictures or graphics are hard to produce.
    - Halftone scanning is the photomechanical reproduction of a black-and-white photograph into a series of fine dots for reproduction or to be imported into a word processing or page layout program.

  - Line drawing is the photomechanical reproduction of a black-and-white photograph into a series of fine lines for reproduction or to be imported into a word processing or page layout program.

- Creation of a specific picture can be performed with a graphic program or CAD program. New looks can be created by using a draw program.

- Use of line-based art which includes rules, boxes, and borders.

  - Rules are lines that can be vertical or horizontal, thick or thin depending upon the effect being created.

  - Boxes are used to enclose text or graphics. They can be used to create strong visual effects by offsetting text or graphics that are to be given further attention.

  - Borders are similar to boxes and can "frame" an item that needs extra emphasis.

- Clip art, a collection of professionally drawn symbols, letters, and pictures, can be used freely because it is in the public domain. Sets of clip art are available at nominal costs for many types of fields.

- Dingbats are small ornamental characters such as bullets, stars, and flowers used to decorate a page or create emphasis of a specific item. These dingbats are not found in standard fonts. Dingbats should be used consistently to help the reader.

☐ Steps in laying out a page

▲ Sketch proposed layouts. Thumbnail sketches are quickly-drawn illustrations of how the design will appear on the page. This type of sketch is generally small and not drawn to scale and should be done before using a desktop publishing program. The first layout may not be the best choice. If several sketches are done, the final choice will be easier to make.

▲ Designate number of columns to be used. Columns play a major role in how the layout will look. Brochures have two, three, or sometimes four columns. Newsletters generally have three or four columns.

▲ Set margins. Deciding how the document will look is critical before setting the margins. Whether the document will be folded or stapled will affect the margin settings.

▲ Rough layouts are developed from the thumbnail sketches. They are drawn to scale and have more detail. Refinements are made during this step.

▲ Comprehensive layouts are the completed design ready for printing. They are usually performed using a desktop publishing program.

ACTIVITY 1: TERMINOLOGY

Define each of the following terms.

1. Balance

2. Emphasis

3. Serif

4. Font

5. Leading

6. Kerning

7. Comprehensive layout

8. Thumbnail sketch

9. Layout

10. Pica

5-3 Graphic Layout and Design

Activities

ACTIVITY 2: CREATING A THUMBNAIL SKETCH

Project 1

Working in groups, create a portfolio that contains aspects of layout and design. The following should be included:

Font usage

Type Styles

Emphasis tools

Types of page layouts and organization

Unconventional design techniques

Items that you prefer

Project 2

Using the information in your group's portfolio and any additional sources you need, plan a masthead (nameplate and logo) that you would like to see on a FAX cover sheet. Each member of the group will create his/her own thumbnail sketch of a masthead. Include any graphics and be sure a full page is created.

Project 3

Plan a design for a one-page flyer announcing an upcoming event at your school. Follow the planning guidelines discussed in the overview. After planning the design, create a thumbnail sketch.

ACTIVITY 3: ROUGH PAGE LAYOUT

Project 1

Using the thumbnail sketch of your FAX cover sheet, create a rough layout. This layout will be used in the next unit (Desktop Publishing) to create the document.

Project 2

Using the thumbnail sketch from *Activity 2, Project 3*, create a rough draft. Give your instructor the rough draft. This layout will be used in the next unit (Desktop Publishing) to create the document.

SECTION 5

Information Processing Tools

Unit 4: Desktop Publishing

Unit Objective: Students will understand terms, describe components, and discuss concepts associated with desktop publishing, and put together a simple publication using desktop publishing procedures.

Student Competencies: After completing this unit, the student will be able to:

1. Identify and use desktop publishing terminology.
2. Describe the components of a desktop publishing system.
3. Discuss the concepts of desktop publishing.
4. Demonstrate desktop publishing tools and procedures for producing a simple publication.

Focus: Documents produced in the office using desktop publishing are often indistinguishable from commercially published materials. The ability to perform desktop publishing skills increases entry-level employability.

5-4 Desktop Publishing

Terminology

Alignment	Function that determines position of type—left, right, centered, justified.
Bit mapped	A method used by laser printers that produces individual letters by forming a pattern of pixels (screen dots).
Bullets	Small black dots or other characters used to call attention to a portion of text, usually specific points or lists.
CAD	Computer Aided Design refers to software that is valuable in doing drawings or designs.
Camera ready	Final copy of text and illustrations (comprehensive layout) ready to be photographed by the printer for reproduction.
Clip art	A collection of handy drawings stored on disk that can be inserted into a document.
Clipboard	An area of memory that is used for saving portions of work that will be placed elsewhere later.
Cropping	Cutting off parts of an image or drawing to make it fit or to show only selected areas.
Desktop publishing	Utilizing a personal computer, appropriate software, and an output device to combine text and graphics to produce a document.
Font	Complete assortment of one typeface and one size, including upper and lower-case letters, punctuation, and numerals.
Format	The size, shape, form, proportions, margins, and overall design of a printed item.
Frames	"Containers" that hold the various elements of art and text in a document.

Gutter space	The space between columns.
Hyphenation	A feature that aids alignment by correctly breaking words that extend to another line.
Handles	Markers on a frame or graphic line that must be accessed (activated or clicked on) before moving or changing that element.
I-Beam	The form taken by the cursor when it is in the work area of a publication. It resembles a capital I.
Image	A copy of a photograph or scanned document that is digitized and stored in memory or on disk.
Kerning	Adjusting the spacing between certain letters to make more efficient use of space and improve appearance.
Laser printer	A printer that produces a high degree of resolution by using a laser beam.
Mouse	A pointing device that lets the user move the cursor or pointer around the screen more easily than with the keyboard.
Page	The portion of a document that will result in a page when printed.
Paste	Placing an existing picture or section of text into an area on a page.
Pica	The standard unit of typographic measurement for font size, line leading, and rule thicknesses; equal to ⅙ inch.
Point	The standard unit of typographic measurement for font size, line leading, and rule thicknesses; equal to 1/72 inch.
Postscript	Printer language that provides a great assortment of font styles for any software program.
Page description language (PDL)	A computer programming language whose vocabulary can express the description and placement of text and graphic elements on a page.
PUB	One of the file extensions used for publication files on PC and MS-DOS computers.

Resolution	A measure of the number of dots per inch on a display screen or an output device such as a printer.
Style sheet	Layouts that can be saved on disk for use with any document.
Typeface	A complete set of characters in a particular design or style.
Typestyle	Normal, bold, italic, underline, outline, shadow, etc.
White space	The blank or unused portions of a page.
WYSIWYG	An acronym for "What you see is what you get."

Unit Overview

Desktop publishing overview

Desktop publishing is utilizing a personal computer, appropriate software, and an output device to combine text and graphics to produce a document.

☐ The primary goal of desktop publishing is the production of a page. The page consists of type, graphics, and other design elements that are integrated to make a whole.

- ▲ Steven Jobs, co-founder of Apple Computer, is credited with the creation of desktop publishing. In 1985 his company introduced the Macintosh and the laser printer to the microcomputer community.
- ▲ By 1986 Jobs predicted that within five years every computer would be incorporating desktop publishing—in other words, DTP would be widespread like the television—everyone would have the capabilities.
- ▲ Microsoft Corporation introduced its *Windows* presentation manager to go with MS-DOS, and Aldus produced a version of *Pagemaker* to run with Windows on IBM PC/ATs and other microcomputers that use the 80286 microprocessor. Both Macintosh and the MS-DOS computers have been gaining new personal publishers every day.
- ▲ Benefits of desktop publishing
  - **Cost saving**—time, materials, and labor.
  - **Control**—information is usually more accurate than if sent outside the company. The source of need is in-house and the information is kept up-to-date.
  - **Speed**—the information is kept up-to-date and can be obtained in a timely manner.
  - **Ease of change**—type and graphics can be manipulated in many different ways and the results seen instantly.
  - **Convenience and quality**—since desktop publishing need not be centralized, information can be used in a wide variety of documents.
  - **Security and autonomy**—Sensitive material can be kept confidential if only one or two are working on a document and it does not leave the company.

☐ A person who does desktop publishing can perform the entire process—the creation of text, layout, graphics, copying, and mailing labels.

- ▲ Text creation
    - Measurements are displayed in picas, points, inches, or centimeters on the ruler to give the user a choice of typesetting measurements.
    - Entering and editing text is generally done in a word processing program and then imported or placed into the desktop publishing program.
    - Formatting the document includes setting margins, line spacing, tabs, etc.
    - A variety of type sizes and styles can be used. Although excessive use of different typefaces is cautioned to avoid the "ransom note" look.
    - Kerning and leading can be set.
    - Indices and tables of contents can be created.
- ▲ Layout
    - Page layouts can be seen in their entirety. Performing electronic page layout is much more efficient than the traditional method of cutting and pasting with knife and wax.
    - Text and graphics can be merged in the layout.
    - Multiple columns can be formatted, even on continued pages.
    - Column widths and heights can vary. The number of columns on a page and the gutter space can be adjusted.
    - Material can be printed vertically or horizontally.
    - The copy (type) can be adjusted to fit on a single page.
    - Page numbers can be placed on the printed pages automatically.
- ▲ Graphic image manipulation
    - Graphic images such as borders, lines, arrows, and dingbats can be generated.
    - Graphics can be expanded or shrunk.
    - Images can be edited and altered.
    - Scanned images can be imported.
    - Images from paint and draw programs can be imported.

- ▲ Printing
  - Completed documents can be printed on a laser printer.
  - Photocopies can be made.
  - If numerous copies are needed, the camera-ready copy can go to the printer.

Desktop publishing components

- ☐ Hardware
  - ▲ **Computers**—professional-level software is written to run on MS-DOS or Macintosh systems. Speed of the microprocessor is important so at least a MS-DOS/PS2 or 386 computer is needed.
    - Hard drives are required because most software programs usually have six or more disks. The hard drives should be at least 80 MEG because of the amount of storage space used by graphics. A hard drive is also required so the programs can be loaded; running programs from floppy disks can be confusing and time consuming.
    - The Macintosh software requires at least a Macintosh Plus with 2 to 4 MEG memory to work.
    - For both the MS-DOS and the Macintosh systems, memory size can range from 1 to 8 MEG, depending on program sophistication.
  - ▲ **Printers**—a laser printer is a must for in-house desktop publishing.
    - A laser printer is used for desktop publishing because it can produce a high-quality printed document.
    - Many laser printers have the Postscript language built in, which provides a great selection of fonts. These types of printers use a Page Description Language (PDL). PDL works with the entire page and creates type in virtually any size and variation by means of reference points for each letter form. It is currently the most versatile printer available.
    - Laser printers that do not use PDL are usually compatible with the Hewlett-Packard family of laser printers. They use downloading fonts from the computer rather than from the printer itself. They use bit mapping, which produces letters by individually mapping each one. Bit mapped printers are usually less expensive than Postscript printers, but can be limiting in desktop publishing.

- **Monitors**
  - Professional desktop publishing software works better with high resolution monitors, such as Hercules compatible, EGA, and/or VGA.
  - Full-page monitors have screens shaped like a standard page and have high resolution. This type of monitor allows the user to see the entire page.
  - Dual-page monitors allow two pages to be seen side-by-side, which helps when working with two-page document layouts.
- **Mouse**—a small pointing device that allows the user to move the pointer around the screen by moving the mouse on the table top. A mouse is a necessity for using desktop publishing programs. Using the keyboard for moving the pointer and selecting commands is tedious.
- **Image scanners**—tools that will transfer photographs, illustrations, and logos into the computer for storage on a disk. These images can then be positioned in documents.

☐ Software

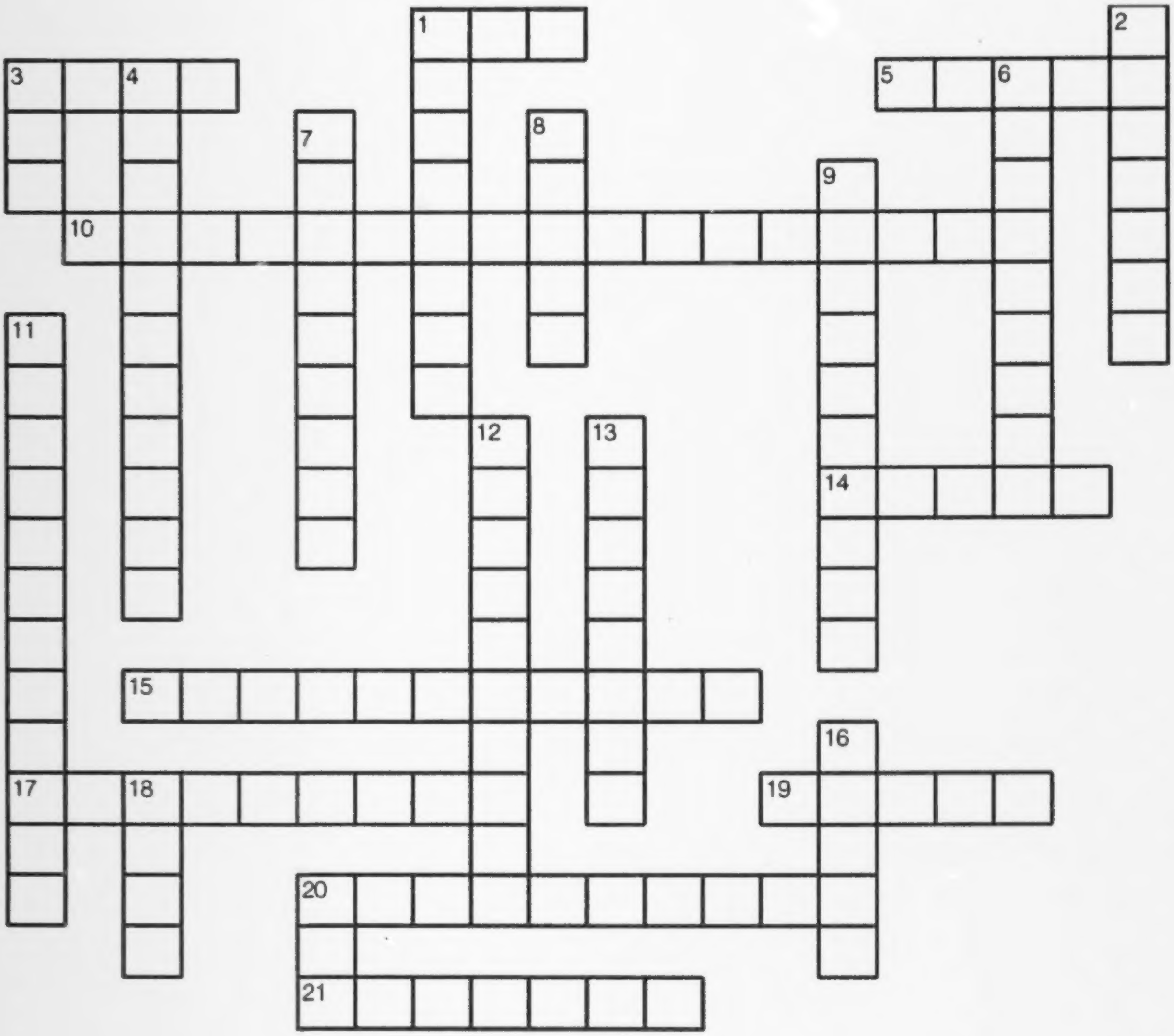
- Word processing software is used to key and edit copy before it is imported or placed into the desktop publishing program. The two programs must be compatible. Word processing programs are becoming more sophisticated and can perform most of the functions performed by a dedicated desktop publishing program. Word processing programs such as *Microsoft Word for Windows* and *WordPerfect for Windows* provide excellent formatting and text-handling functions.
- Graphics software is used to enhance documents with graphs, charts, pictures, line drawings, logos, page decorations, clip art, and scanned images. These images are transferred to page layout software and into the document before printing.
- Page layout software packages allow the user to combine the text from the word processing programs with images from the graphics programs.
  - There is a wide range of programs that vary in price from under $100 to more than $1,000.
  - Two programs that dominate the business marketplace are Aldus *Pagemaker* and Xerox *Ventura Publisher*.
- Many MS-DOS desktop publishing packages require *Microsoft Windows* to operate. Sometimes it is included in the publishing packages.

Operational procedures

Some software manuals give basic information on how to design a publication. It is important to study these lessons before preparing a design. There is no point in running a desktop publishing program until there is a design from which to work.

- ☐ **Creating a document**—usually done with page layout software but as word processing software becomes more powerful, desktop publishing can be performed using either type of software.
    - ▲ **Text**—the text portions of a publication are usually entered into a word processing program and saved on disk. Page layout programs manage the placement, size, fonts, and spacing of headlines, captions, and general format.
    - ▲ **Graphics**—can be retrieved from the disk and placed on the screen page with the desktop publishing program controlling placement, size, dimensions, and cropping.
        - There are many popular draw or "paint" programs that contain graphics.
        - Page layout programs have drawing tools used for creating simple graphics.
        - *Windows* has some drawing tools.
        - Drawings produced by Computer Aided Design (CAD) programs produce excellent results when used with desktop publishing.
        - Graphics captured by other input devices such as scanners, fax machines, and digitizers can be incorporated into a publication as long as the image can be saved on disk in a compatible format.
    - ▲ **Style sheets**—used to save repetitious work. Commonly used layout formats can be stored on disk and reused and altered as needed. They are like templates, in that layout information can be stored without the text or graphics. Many programs include a number of predesigned style sheets.
    - ▲ **Screen manipulation**—unless a full- or dual-page screen is used, the user must do much scrolling back and forth. Commands that zoom in and enlarge a small portion of the screen can be used to work on a small area for editing or drawing.
- ☐ **Printing**—The final product can be sent to the printer or saved on a disk.

ACTIVITY 1: TERMINOLOGY CROSSWORD PUZZLE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ACTIVITY 1: TERMINOLOGY CROSSWORD PUZZLE CLUES

ACROSS

1. Refers to software that is valuable in doing drawings or designs.

3. Equal to 1/6 inch.

5. A copy of a photograph or scanned document that is digitized and stored in memory or on disk.

10. Utilizing a personal computer, appropriate software, and an output device to combine text and graphics to produce a document.

14. Placing an existing picture or section of text into an area on a page.

15. The space between columns.

17. Normal, plain, bold, italic, underline, outline, shadow, etc.

19. Equal to 1/72 inch.

20. Printer language that provides a great assortment of font styles for any software program.

21. Small black dots used to call attention to a portion of text, usually specific points or lists.

DOWN

1. Cutting off parts of an image or drawing to make it fit or to only show selected areas.

2. Adjusting the spacing between letters to make more efficient use of space and improve appearance.

DOWN

3. A printer language whose vocabulary can express the description of elements on a page.

4. Final copy of text and illustrations (comprehensive layout) ready to be photographed by the printer for reproduction.

6. Function that determines position of type—left, right, centered, justified.

7. A method used by laser printers that produces individual letters by forming a pattern of pixels.

8. A pointing device that lets the user move the cursor or pointer around the screen more easily than with the keyboard.

9. The blank or unused portions of a page.

11. A printer that produces a high degree of resolution by using a laser beam.

12. Layouts that can be saved on disk for use with any document.

13. A complete set of characters in a particular design or style.

16. Complete assortment of one typeface and one size, including upper and lower-case letters, punctuation and numerals.

18. The portion of a document that will result in a page when printed.

20. One of the file extensions for publication files on PC and MS-DOS computers.

ACTIVITY 2: COMPONENTS OF A DESKTOP PUBLISHING SYSTEM

List and describe the major components of a desktop publishing system.

5-4 Desktop Publishing

Activities

ACTIVITY 3: CONCEPTS OF DESKTOP PUBLISHING

Define desktop publishing and describe its basic concepts.

ACTIVITY 4: DESKTOP PUBLISHING PROJECT

Project 1

Using your rough draft of a FAX cover sheet completed in Unit 3, Activity 3, Project 1 and desktop publishing techniques, complete the cover sheet so that it is camera-ready.

Project 2

Using the rough draft of your one page flyer completed in Unit 3, Activity 3, Project 2 and desktop publishing techniques, complete the flyer so that it is camera-ready.

SECTION 6
Closure

Essential Element 75.87 (j)(5)

5. **Fundamental concepts and skills related to emerging microcomputer-based information processing tools. The student will be provided opportunities to:**

   B. understand and use features of integrated software packages to share data among applications.

Integration of Applications 6-1

Lesson Plan

Essential Elements:
Allocated Time: 2.5/5 Hours

Unit Objective: The student will demonstrate knowledge of the meaning and purposes of integrated software programs and will identify and compare components found in integrated software packages.

Student Competencies: After completing this unit, the student will be able to:

1. Describe integrated software.
2. Perform integration applications for:
    a. Mail merge from a database into word processing.
    b. Spreadsheet table information into word processing.
    c. Produce graphics and text to be imported into a desktop publishing program.

Focus: Accuracy and efficiency is vital in the business world. Being able to move data from one program to another without going through cumbersome procedures for saving data, exiting one program, restarting another and then transferring the data is important.

Domains: Activities and competency tests provide learning experiences within the cognitive, psychomotor, or affective domains and are coded on the Activity and Competency Test Matrices.

Basic Skills: Activities and competency tests reinforce the basic skills of reading, writing, and mathematics and are coded on the Activity and Competency Test Matrices.

6-1

Integration of Applications

Content Outline

Integrated software

- Types of integrated software
- Components of integrated software programs
- Comparison of software packages

Integrating applications

- Word processing and information management
- Word processing and spreadsheets
- Word processing, graphics, and desktop publishing

Teacher Activities

Teacher Preparation

- ☐ Preview the unit
- ☐ Review unit objectives
- ☐ Make instructional analysis
- ☐ Assess student learning needs
- ☐ Decide on lesson domain: cognitive, psychomotor, or affective domain
- ☐ Select instructional materials based on instructional analysis and student learning needs
- ☐ Select instructional strategies based on lesson content and student learning needs
- ☐ Prepare lesson plans from the unit lesson
- ☐ Prepare additional instructional material
- ☐ Reserve necessary media and equipment

Teacher Presentation

- ☐ Present student objectives
- ☐ Establish rapport with students
- ☐ Review lesson objectives with students
- ☐ Relate lesson to prior or future learning
- ☐ When appropriate, encourage student interaction through questioning, discussions, or some other strategy
- ☐ Emphasize the value/importance of the unit or activity
- ☐ Allow time for closure of a lesson

Reteach Activities

- ☐ Identify area(s) of weakness from results of evaluation
- ☐ Select unit activities not previously used
- ☐ Use additional resources and/or create materials based on student learning needs
- ☐ Use a different teaching strategy in reteaching
- ☐ Retest

Specific Teaching Activities

☐ Arrange demonstrations of two or more integrated software packages in the classroom, at the location of a user, or at a software dealer.

☐ Plan a lecture and discussion to introduce the integrated software components and the methods for integration.

☐ Divide the students into two groups, have each group use a different integrated software package to solve the same problem.

☐ Prepare a tutorial program for an integrated package available for students.

Matrices

ACTIVITY MATRIX

Activities		Domains			Basic Skills		
		Cognitive	Psycho-motor	Affective	Reading	Writing	Math
1		X			X	X	
2	Project 1	X	X		X	X	X
	Project 2	X	X		X	X	X
	Project 3	X	X		X	X	X

COMPETENCY TEST MATRIX

Parts		Domains			Basic Skills		
		Cognitive	Psycho-motor	Affective	Reading	Writing	Math
I		X			X	X	
II	Project 1	X	X		X	X	X
	Project 2	X	X		X	X	X
	Project 3	X	X		X	X	X
	Project 4	X	X		X	X	X

Competency Test

PART I: INTEGRATED SOFTWARE

Answer the following questions using complete sentences.

1. List four components included in integrated software packages.

2. What two components are part of virtually every package?

3. What is the primary purpose for integrated software?

4. List three criteria to use when comparing software packages.

   1)

   2)

   3)

5. What are the two types of integrated software?

Competency Test

PART II: INTEGRATION APPLICATIONS

Project 1

Perform a mail merge by following these procedures:

1. Key the address list into your database.
2. Key the form letter into your word processing program.
3. Perform the mail merge for both letters and a set of labels.

Address List

Bob Garcia
Garcia & Sons Inc.
5686 Winding St.
San Francisco, CA 90411

Paul Wellington
E Z Computers
4563 Winnona Dr.
Sunnyside, AZ 36980

Martin Mills
Mills Distribution
553 Merle Place
Tacoma, WA 43303

Molly Morgan
Morgan Motivators
6789 Eastern Ave.
Hayward, WI 64834

Joan Evins
Value Mart
160 Eve Lane
Cleveland, OH 44108

Annette DeLeon
Legend Computers
900 Loma Linda Blvd.
Oceanside, CA 90049

Marian Reed
ReedMore
45000 Founders Rd.
Itaska, NH 21456

Ying Fou
Technology Trainer
9460 Elm St.
Darring, NY 14408

Diem Phou
CompuLearn
865 N. Bridge St.
Gayland, FL 53794

George Rodriguez
R and L Distribution
92 Martindale Dr.
Cedarlane, WA 43012

Form Letter

(current date)

Dear (person's name):

Thank you for submitting your letter and copies of the training programs you offer that would be beneficial to my employees. Each program looks outstanding. Several of the employees seem excited about the new training program and are welcoming the opportunity to increase their competency.

We will select several programs from the list for our employees. Each employee will attend five training programs available this fiscal year. Additional training programs will be offered beginning next fiscal year. Please let us know what programs will be available next year.

Sincerely,

Katy Belvy
Director

Project 2

Integrate the following information by following these procedures:

1. Key the data into a spreadsheet program.
2. Key memo into a word processing program.
3. Integrate the spreadsheet information into memo using the word processing program.

Data

Contact Name	Training Program	Travel Expenses	Total Cost
Bob Garcia	3,000	1,500	4,500
Molly Morgan	4,900	2,100	7,000
Ying Fou	2,300	1,600	3,900
Paul Wellington	2,945	1,180	4,125
Joan Evins	3,115	2,575	5,690
Diem Phou	4,000	2,900	6,900
Martin Mills	2,765	3,015	5,780
Annette DeLeon	3,499	2,900	6,399
George Rodriguez	2,559	2,141	4,700
Marian Reed	3,318	3,677	6,995

Memo

DATE: (Current date)

TO: All departments

FROM: Tanya Kiniski, Vice-President

SUBJECT: TRAINING PROGRAMS

The following information is the cost for the training programs we discussed. The programs are tailored to meet the needs of each employee. This listing provides a break down of the program cost and each person's expenses.

(Spreadsheet information)

If you have any questions concerning this information, please contact me as soon as possible.

xx

Project 3

Design an appealing letterhead. Import the information from *Project 1* into a desktop publishing program and add appropriate graphics.

Project 4

Using the spreadsheet information provided in *Project 2*, create a bar graph, and then import the graph into a desktop publishing program. Provide titles for the bars and a main title for the entire graph.

Activity Answers

Activity 1

1. Integrated software became a reality because businesses wanted a single program to perform several tasks.
2. Prepackaged programs that allow the users to change from one application program to another without returning to the operating system and easily transfer data between applications.
3. Single and multiple programs.
4. Any three of the following can be included:
    - a. Spreadsheet
    - b. Database
    - c. Word processor
    - d. Graphics
    - e. Communications
    - f. Project management
    - g. Desktop tools
5. Any three of the following can be included:
    - a. Inclusion or exclusion of modules.
    - b. Capacity of spreadsheet and database.
    - c. Data limitations.
    - d. Operating speed.
    - e. Method of integration.

Activity 2

Projects 1-3 Evaluated to the satisfaction of the instructor.

Competency Test Answers

Part I

Project 1

1. Any four of the following may be included:
    - a. Spreadsheet
    - b. Database
    - c. Word processor
    - d. Communications
    - e. Graphics
    - f. Project manager
    - g. Desktop tools
2. Spreadsheet and database
3. To allow different processing to be done with data, without exiting from the program.
4. Any three of the following may be included:
    - a. Inclusion of certain modules
    - b. File capacity
    - c. Data limitations
    - d. Operating speed
    - e. Method of integration
5. Single program integration, multiple program integration.

Part II

Projects 1-4 Evaluated to the satisfaction of the instructor.

Closure of Microcomputer Applications 6-2

Lesson Plan

This section is designed to provide a closure to the course Microcomputer Applications. It reviews course objectives in relation to student competencies. Suggestions for making course and student evaluations are included.

Allocated Time: 2.5/5 Hours

Unit Objective: Students will be able to analyze, evaluate, and demonstrate proficiency in course content.

Student Competencies: After completing this unit, the student will be able to:

1. Relate the objectives of the course Microcomputer Applications to personal success in the business environment.
2. Analyze section and unit contents in relation to the course objectives.
3. Recognize levels of competency performance.
4. Assess the course in terms of objectives and content.
5. Complete a course examination with a score of 70% or better accuracy.

Focus: An important component of the learning process is closure. Closure can be a review, a summation, or a conclusion. Its purpose is to see how the parts make up or contribute to the whole. A final question needs to be answered: "Has the course accomplished its primary objective?"

6-2 Closure of Microcomputer Applications

Content Outline

Review of course objectives by sections and units

Review of sections and units
Introduction to microcomputers
Word processing
Information management
Electronic spreadsheets
Information processing tools
Closure

Analysis of student competencies

Course evaluation

Examination

Teacher Activities

Teacher Preparation

- ☐ Preview unit.
- ☐ Review unit objectives.
- ☐ Make instructional analysis.
- ☐ Assess student learning needs.
- ☐ Decide on lesson domain: cognitive, psychomotor, or affective domain.
- ☐ Select instructional materials based on instructional analysis and student learning needs.
- ☐ Select instructional strategies based on lesson content and student learning needs.
- ☐ Prepare lesson plans from the unit lesson.
- ☐ Prepare additional instructional material.
- ☐ Reserve necessary media and equipment.

Teacher Presentation

- ☐ Present student objectives.
- ☐ Establish rapport with students.
- ☐ Review lesson objectives with students.
- ☐ Relate lesson to prior or future learning.
- ☐ When appropriate, encourage student interaction through questioning, discussions, or some other strategy.
- ☐ Emphasize the value/importance of the unit or activity.
- ☐ Allow time for closure of a lesson.

Reteach Activities

- ☐ Identify area(s) of weakness from results of evaluation.
- ☐ Select unit activities not previously used.
- ☐ Use additional resources and/or create materials based on student learning needs.
- ☐ Use a different teaching strategy in reteaching.
- ☐ Retest.

Specific Teaching Activities

☐ Design a bulletin board to help students toward a personal summative evaluation of the Microcomputer Applications course. Suggestions are: WHAT I HAVE LEARNED FROM MAP; MY BEST FROM MAP; AFTER MAP, WHAT?

☐ Review overhead transparencies included with Section 1 on course objectives.

☐ Discuss with students the objectives of the course.

☐ Divide students into groups. Assign to each group a section to be reviewed and presented to the class. The reviews might include competencies developed, synopsis of units, importance of units. Have the other students take notes.

☐ Hand out the listing of competencies to the class. Have each student rate what he/she considers to be his/her level of performance for each competency.

Suggested levels of performance might include: MIN (minimum), 1; F (fair), 2; A (average), 3; or M (mastery), 4. The instructor will need to determine what criteria constitute the levels. Collect these sheets and tally the information for each of the competencies. Use this information when planning for the next year. (For example, results might suggest you make revisions in your teaching style, presentation, etc., if a majority of the students feel they have achieved only a minimal mastery.)

☐ Have students develop review questions for the examination. Provide the students with the procedures for keying in the questions. Make copies of each group of questions and answers for the remaining class members. Review these with the students. Inform the students that you will be adding some questions of your own. Provide the students with examples. Give the examination from these questions.

☐ Give examples of the type of psychomotor skills you will be testing.

☐ Assign time for students to review for their examination. Be sure they have the correct answers to the questions and/or activities.

☐ If you have not used the simulations, now would be a good time to use them. If you have used some of the simulations, consider using the others in this closure.

SECTION 6

Closure

Unit 1: Integration of Applications

Unit Objectives: The student will demonstrate knowledge of the meaning and purposes of integrated software programs and will identify and compare the components found in integrated software packages.

Student Competencies: After completing this unit, the student will be able to:

1. Describe integrated software.
2. Perform integration applications for:
    a. Mail merge from a database into word processing.
    b. Spreadsheet table information into word processing.
    c. Produce graphics and text to be imported into a desktop publishing program.

Focus: Accuracy and efficiency is vital in the business world. Being able to move data from one program to another without going through cumbersome procedures for saving data, exiting one program, restarting another, and then transferring the data is important.

Unit Overview

Integrated software

Integrated software refers to packaged programs that allow users to change from one application to another without returning to the operating system and easily transfer data between applications. Integrated software came about because industry wanted a single program to perform several tasks and ways to import data into their stand-alone programs.

- ☐ Types of integrated software
  - ▲ Single program integration
    - Most lower-level integrated software is of this type, though the methods of integration vary.
    - Examples include *Microsoft Works* and *Lotus Works.*
  - ▲ Multiple program integration
    - The idea of multiple programs might seem contradictory with integration, but stand-alone software packages can be integrated with other stand-alone packages.
    - High-level software, such as *WordPerfect 5.1*, *Microsoft Word 5.5*, *dBase III*, *Pagemaker*, *Lotus 1-2-3*, and many others, allows data to be imported into the program and processed.
- ☐ Components of integrated software programs
  - ▲ A spreadsheet is part of virtually all integrated packages.
  - ▲ A database is also almost universal.
  - ▲ Word processors are included in most packages, but often are less sophisticated than stand-alone word processors.
  - ▲ Graphics modules are frequently included so data entered in the spreadsheet can be displayed in the form of a chart or graph. Some graphics modules include drawing routines.
  - ▲ Communication modules permit data, from the database or spreadsheet portions, for example, to be sent to another computer, or data from another computer to be captured.

- ▲ Project management sections are featured occasionally. These modules allow managers to work out scheduling and sequencing for complex jobs and projects.
- ▲ Desktop tools are routines that let the user do simple calculations, write informal notes, or look up a phone number without exiting the program.

☐ Points of comparison between integrated software packages

- ▲ Inclusion or exclusion of software components. This is the most obvious difference between products.
- ▲ Capacity of spreadsheet and database programs. There are generally limitations related to memory size. Software packages differ in the size of the program itself, which in turn affects the memory available for data.
- ▲ Data limitations. The number of rows and columns permitted varies, as do maximums for field lengths and record length, and types of data permitted for certain operations.
- ▲ Operating speed. Specifically chosen programs measure the time required by the program to carry out a number of frequently called for routines. For some users, this is a significant consideration.
- ▲ Method of integration. Most use menus, but they can be single line menus, or full screen. Sometimes function keys are used. The number of keystrokes varies.

Integrating applications

After learning the basics of word processing, information management, spreadsheets, graphics, and desktop publishing, combining knowledge about and skills in various programs gives flexibility to create professional business documents.

☐ Word processing and information management

- ▲ Word processing is the foundation of integrating applications. Text is generally keyed in and then manipulated. Importing information from databases, spreadsheets, and even graphics can help speed the process of creating a document.
- ▲ Mail merge is the most common routine performed. Data is exported from a database into the word processing document program. Labels and envelopes can be printed and form letters can be individualized quickly and easily.

☐ Word processing and spreadsheets

- ▲ Data keyed into spreadsheets do not have to be rekeyed into a word processing program to produce reports. By exporting the data from the spreadsheet and importing the data into the word processing program, accuracy and productivity are increased.
- ▲ Graphs and charts can be imported into a word processing program. (Stand-alone programs generally contain this feature.)

☐ Word processing, graphics, and desktop publishing

- ▲ Stand-alone word processing programs, such as *WordPerfect 5.1* and *Microsoft Word 5.5*, allow the user to import graphics, but the user will be unable to actually see the graphics.
- ▲ Desktop publishing programs allow the user to import graphics and see exactly what the document will look like.
- ▲ WYSIWIG features are becoming important in spreadsheets, word processing, and the *Windows* environment. Using programs created for *Windows*, allows the user to see what the information will look like.

ACTIVITY 1: INTEGRATED SOFTWARE

Complete the following questions. Use complete sentences.

1. Why did integrated software come about?

2. What is integrated software?

3. How many types of integrated software exist and what are they?

4. List three components generally included in an integrated software program.

5. List three comparisons of software packages.

6-1 Integration of Applications

Activities

ACTIVITY 2: INTEGRATION APPLICATIONS

Project 1

Perform a mail merge by following these procedures:

1. Key the following address list into your database.
2. Key the form letter into your word processing program.
3. Perform the mail merge for both the letters and for a set of labels.

Address List

Bob Russell
District Manager
2501 Winslow Drive
Waco, TX 76798

Ted Peyton
District Manager
1106 Hanover Road
Anderson, SC 29621

Rick D'Angelo
District Manager
5432 Oak Ridge Drive
Cheshire, CT 06410

Renee Johnson
District Manager
100 Briarwood
Commerce, TX 75428

Diane Watson
District Manager
600 N. Neal
Whittier, CA 90606

Elaine McDaniel
District Manager
1411 Anvil
Houston, TX 77090

Francis Brown
District Manager
876 Kagin Blvd.
Atlanta, GA 30305

David Yen
District Manager
P. O. Box 930
Hopewell, NY 12353

Sue Ling
District Manager
500 Longwood Rd.
Farmville, VA 23901

Nelson Gonzales
District Manager
23 Pinewood Loop
St. Paul, MN 55105

Form Letter

(current date)

Dear (person's name):

Thank you for promptly returning your expense report. I am curious about the report because it appears you had dinner alone each evening. Is this a mistake or do you normally dine alone when you are on the road? Dining out normally is an excellent opportunity to reinforce unit objectives with a manager or listen to a client relate to how well we are performing our service.

Keep up the good work. Please get back to me with a brief explanation of the evening meal charges.

Sincerely,

Raymond Miller
Financial manager

Project 2

Integrate the following information by following these procedures:

1. Key the data into a spreadsheet program.
2. Key the memo into a word processing program.
3. Use the names and addresses in Project 1 to perform another mail merge.
4. Integrate the spreadsheet information into the word processing program.

Data

Salesperson	1st Qtr.	2nd Qtr.
Bob Russell	3,000	4,500
Renee Johnson	4,900	7,000
David Yen	2,300	3,900
Ted Peyton	2,945	4,125
Diane Watson	3,115	5,690
Sue Ling	4,000	6,900
Rick D'Angelo	2,765	5,780
Elaine McDaniel	3,499	6,399
Nelson Gonzales	2,559	4,700
Francis Brown	3,318	6,995

Memo

(Current date)

Dear (person's name):

Thank you for your help in increasing our sales during this past quarter. These are the highest sales in any one quarter for the past four years. The following is a summary of your sales.

(Spreadsheet information)

To show our appreciation for your hard work and dedication, would you and your spouse please join us for our district meeting next Wednesday evening at the Red Lobster Restarant near company headquarters. If there is a problem with this meeting time or place, contact me as soon as possible.

Sincerely,

Charles Richley
Regional Manager

Project 3

Using the spreadsheet information provided in *Project 2*, create a bar graph, import the graph into a desktop publishing program. Provide titles for the bars and a main title for the entire graph.

SECTION 6

Closure

Unit 2: Closure of Microcomputer Applications

Unit Objective: Students will be able to analyze, evaluate, and demonstrate proficiency in course content.

Student Competencies: After completing this unit, the student will be able to:

1. Relate the objectives of the course Microcomputer Applications to personal success in the business environment.
2. Analyze section and unit contents in relation to the course objectives.
3. Recognize levels of competency performance.
4. Assess the course in terms of objectives and content.
5. Complete a course examination with a score of 70% or better accuracy.

Focus: An important component of the learning process is closure. Closure can be a review, a summation, or a conclusion. Its purpose is to see how the parts make up or contribute to the whole. A final question needs to be answered: "Has the course accomplished its primary objective?"

Review of course objectives by sections and units

☐ Introduction to Microcomputer Applications

- ▲ Introduction to the course
    - Relate the purpose of Microcomputer Applications to office education, business and industry.
    - Recognize the role of the youth organization relative to Microcomputer Applications.
    - Discuss course objectives, equipment, units, competencies, and evaluation measures.
    - Explain classroom organization, management, and safety.
- ▲ Microcomputer systems
    - Use commonly accepted terminology related to data processing with microcomputers.
    - Trace the evolution of the personal computer in chronological order.
    - Describe each computer generation including the current generation.
    - Discuss the types of computer systems.
    - Categorize hardware devices by function.
    - Identify and describe the most widely used business systems.
- ▲ Basic microcomputer operations
    - Use commonly accepted terms related to data processing operations with microcomputers.
    - Perform a "cold boot" and a "warm boot" using a standard operating system on a microcomputer.
    - Use standard commands to perform disk management, including preparing a data disk for use, copying and deleting a file, and displaying the disk directory.

    - Discuss types of software including programming languages, utility packages, and application software.

  - ▲ Social implications
    - Define terminology related to computer crime, computer users, and new computer devices and techniques.
    - Identify the major issues and technological developments related to computers and society.
    - Describe ethical and legal issues that have arisen as a result of the computer revolution.
    - Identify privacy issues involved with electronic data storage.
    - Explain reasons for concern about the reliability of computer systems.

- ☐ Word processing
  - ▲ Introduction to word processing
    - Use word processing terminology.
    - Describe the steps in the document cycle.
    - Categorize the production features of word processing software.
    - Demonstrate the ability to move around documents, enter data, save a file, and edit documents.
  - ▲ Document production procedures
    - Classify common documents by type.
    - Format and edit documents.
    - Prepare mailable documents using a word processing program.

- ☐ Information management
  - ▲ Introduction to information management
    - Define terms related to information management.
    - Discuss the concepts of information management.
    - Explain the typical uses of microcomputer-based information management.
    - Enter and manipulate data in a database.

  - ▲ Information management procedures
    - Design and construct a database.
    - Access information using search and sort commands with logical operations such as AND, OR, and NOT and relate the commands to particular applications.
    - Prepare and print reports.

- ☐ Electronic spreadsheets
  - ▲ Introduction to spreadsheets
    - Use terminology associated with popular spreadsheet programs.
    - Discuss the purposes and uses for the spreadsheet.
    - Describe the form and components of a spreadsheet.
    - Demonstrate functions and procedures available with most spreadsheet programs to enter data into a template.
  - ▲ Spreadsheet procedures
    - Retrieve and modify data in an electronic spreadsheet and carry out the necessary steps to report the results.
    - Analyze a simple problem that is appropriate for spreadsheet solution, and design a template that can be used to solve the problem.
    - Report the results of processing with an electronic spreadsheet in both tabular and graphic form.

- ☐ Information processing tools
  - ▲ Telecommunications
    - Use terminology common to telecommunications.
    - Describe procedures for communicating with electronic bulletin boards, on-line information services, and facsimile transmissions.
    - Explain the concept of electronic mail.
  - ▲ Networking
    - Use terminology associated with networking.
    - Identify configurations for local area networks.
    - Describe components common to networks.

- Discuss advantages and disadvantages of networking.

- Graphic layout and design
  - Identify terminology related to layout and design.
  - Use graphic layout and design techniques to prepare a thumbnail sketch.
  - Create a rough page layout.
- Desktop publishing
  - Identify and use desktop publishing terminology.
  - Describe the components of a desktop publishing system.
  - Discuss the concepts of desktop publishing.
  - Demonstrate desktop publishing tools and procedures for producing a simple publication.

☐ Closure

- Integration of applications
  - Explain the meaning of integrated software.
  - Perform integration applications for:
    - Mail merge from a database into word processing.
    - Spreadsheet table information into word processing.
    - Graphics and text to be imported into a desktop publishing program.
- Course closure

Analysis of student competencies

Course evaluation

Examination

ACTIVITIES 1-2: PERSONAL SUCCESS IN RELATION TO OBJECTIVES

Break into groups designated by your instructor. Your group has been assigned a specific section from *Microcomputer Applications.* After reviewing the units within the section, make an oral report to your class, having each member of the group give a presentation.

For each unit, report:

A. Section and unit titles.

B. Major objective(s).

C. Synopsis of units.

D. Importance of the unit relative to one's personal success and the business environment.

6-2 Closure of Microcomputer Applications

Activities

ACTIVITY 3: RECOGNIZING LEVELS OF PERFORMANCE

From the list of the Microcomputer Applications course competencies on the next page, rate your personal achievement for each of the competencies.

Circle a 4 if ... you have **mastered** the competency.

Circle a 3 if ... you have an **average mastery** of the competency.

Circle a 2 if ... you have a **fair mastery** of the competency.

Circle a 1 if ... you have only a **minimal mastery** or if you have not had the opportunity to master the competency.

MICROCOMPUTER APPLICATIONS
COMPETENCY PERFORMANCE EVALUATION

(Mastery = 4 and Nonmastery = 1)

COMPETENCIES

I. Introduction to Microcomputers
1. Introduction to the Course

NONE

2. Microcomputer Systems

4 3 2 1 1. Use commonly accepted terminology related to data processing with microcomputers.
4 3 2 1 2. Trace the evolution of the personal computer in chronological order.
4 3 2 1 3. Describe each computer generation including the current generation.
4 3 2 1 4. Discuss the types of computer systems.
4 3 2 1 5. Categorize hardware devices by function.
4 3 2 1 6. Identify and describe the most widely used business systems.

3. Basic Microcomputer Operations

4 3 2 1 1. Use commonly accepted terms related to data processing operations with microcomputers.
4 3 2 1 2. Perform a "cold boot" and a "warm boot" using a standard operating system on a microcomputer.
4 3 2 1 3. Use standard commands to perform disk management, including preparing a data disk for use, copying and deleting a file, and displaying the disk directory.
4 3 2 1 4. Discuss types of software including programming languages, utility packages, and application software.

4. Social Implications

4 3 2 1 1. Define terminology related to computer crime, computer users, and new computer devices and techniques.
4 3 2 1 2. Identify the major issues and technological developments related to computers and society.
4 3 2 1 3. Describe ethical and legal issues that have arisen as a result of the computer revolution.
4 3 2 1 4. Identify privacy issues involved with electronic data storage.
4 3 2 1 5. Explain reasons for concern about the reliability of computer systems.

COMPETENCIES

II. Word Processing
1. Introduction to Word Processing

4 3 2 1 1. Use word processing terminology.
4 3 2 1 2. Describe the steps in the document cycle.
4 3 2 1 3. Categorize the production features of word processing software.
4 3 2 1 4. Demonstrate the ability to move around documents, enter data, save a file, and edit documents.

2. Document Production Procedures

4 3 2 1 1. Classify common documents by type.
4 3 2 1 2. Format and edit documents.
4 3 2 1 3. Prepare mailable documents using a word processing program.

III. Information Management
1. Introduction to Information Management

4 3 2 1 1. Define terms related to information management.
4 3 2 1 2. Discuss the concepts of information management.
4 3 2 1 3. Explain the typical uses of microcomputerbased information management.
4 3 2 1 4. Enter and manipulate data in a database.

2. Information Management Procedures

4 3 2 1 1. Design and construct a database.
4 3 2 1 2. Access information using search and sort commands with logical operations such as and, or, and not and relate the commands to particular applications.
4 3 2 1 3. Prepare and print reports.

IV. Electronic Spreadsheets
1. Introduction to Spreadsheets

4 3 2 1 1. Use terminology associated with popular spreadsheet programs.
4 3 2 1 2. Discuss the purposes and uses for the spreadsheet.
4 3 2 1 3. Describe the form and components of a spreadsheet.
4 3 2 1 4. Demonstrate functions and procedures available with most spreadsheet programs to enter data into a template.

COMPETENCIES

2. Spreadsheet Procedures

4 3 2 1 1. Retrieve and modify data in an electronic spreadsheet and carry out the necessary steps to report the results.
4 3 2 1 2. Analyze a simple problem that is appropriate for spreadsheet solution, and design a template that can be used to solve the problem.
4 3 2 1 3. Report the results of processing with an electronic spreadsheet in both tabular and graphic form.

V. Information Processing Tools

1. Telecommunications

4 3 2 1 1. Use terminology common to telecommunications.
4 3 2 1 2. Describe procedures for communicating with electronic bulletin boards, on-line information services, and facsimile transmissions.
4 3 2 1 3. Explain the concept of electronic mail.

2. Networking

4 3 2 1 1. Use terminology associated with networking.
4 3 2 1 2. Identify configurations for local area networks.
4 3 2 1 3. Describe components common to networks.
4 3 2 1 4. Discuss advantages and disadvantages of networking.

COMPETENCIES

3. Graphic Layout and Design

4 3 2 1 1. Identify terminology related to layout and design.
4 3 2 1 2. Use graphic layout and design techniques to prepare a thumb-nail sketch.
4 3 2 1 3. Create a rough page layout.

4. Desktop Publishing

4 3 2 1 1. Identify and use desktop publishing terminology.
4 3 2 1 2. Describe the components of a desktop publishing system.
4 3 2 1 3. Discuss the concepts of desktop publishing.
4 3 2 1 4. Demonstrate desktop publishing tools and procedures for producing a simple publication.

VI. Closure

1. Integration of Applications

4 3 2 1 1. Explain the meaning of integrated software.
4 3 2 1 2. Perform integration applications for:
4 3 2 1 a. Mail merge from a database into word processing.
4 3 2 1 b. Spreadsheet table information into word processing.
4 3 2 1 c. Graphics and text to be imported into a desktop publishing program.

2. Closure for Microcomputer Applications

NONE

ACTIVITY 4: ASSESSING THE OBJECTIVES AND COURSE CONTENT

Working in the same group and section and units as in *Activity 1*, assign each member of the group a specific portion of a section. Have each group member prepare seven questions with answers which could be used for an examination. As part of the seven questions, include two that relate to skill development. Key in the questions following the instructions provided by your instructor. They will be printed out and copied for your classmates.

APPENDIX A
Reference Addresses

PUBLISHERS

Addison-Wesley Publishing Co., Inc.
Reading, MA 01867

Allyn & Bacon
Div. of Simon & Schuster
160 Gould Street
Needham Heights, MA 02194

American Association for Vocational Instructional Materials
745 Gaines Road
Athens, GA 30605

American Bankers Assn.
1120 Connecticut Ave. NW
Washington, DC 20036

AVA Resources
2020 N. 14th Street
Arlington, VA 22201

Bantam Books
Div. of Bantam Doubleday Dell Publishing
666 Fifth Avenue
New York, NY 10103

Brooks/Cole Publishing Co.
Div. of Wadsworth
511 Forest Lodge Road
Pacific Grove, CA 93950

William C. Brown Group
2460 Kerper Blvd.
Dubuque, IA 52001

Career Aids, Inc.
0417 Nordhoff Street
Dept. K 65
Chatsworth, CA 91311

The Career Press
Box 34, 180 Fifth Avenue
Hawthorne, NJ 07507

Career Publishing
Box 5486
Orange, CA 92613-5486

Chilton Book Company
201 King of Prussia Road.
Radnor, PA 19089-2030

Chronicle Guidance Pub., Inc
66 Aurora Street
Moravia, NY 13118-1190

Curriculum Publications Clearinghouse
46 Horrbin Hall
Macomb, IL 61455

Datapro
1805 Underwood Blvd.
Delran, NJ 08075

Delmar Publishing Inc.
2 Computer Drive West
Box 15-015
Albany, NY 12212

Educational Filmstrips
1405 19th Street
Huntsville, TX 77340

Eric Clearinghouse
Indiana University
Smith Research Center, Ste 150
2805 SE Tenth Street
Bloomington, IN 47408-2698

Glencoe Publishing Co.
Div. of Macmillan/McGraw Hill
School Publishing
936 Eastwind Drive
Westerville, OH 43081

Harper Collins Publisher
10 East 53rd Street
New York, NY 10022

Harcourt Brace Jovanovich, Inc.
6277 Sea Harbor Drive
Orlando, FL 32887

Hemphill
1400 Wather
Austin, TX 78703

Houghton-Mifflin Co.
One Beacon Street
Boston, MA 02107

IEEE Computer Society Press
10662 Los Vaqueros Circle
Los Alamitos, CA 90720

Irwin Publishing Co.
Div. of Times Mirror
1818 Ridge Road
Homewood, IL 60430

MPC Educational Publishers
839 White Plains Road
Bronx, NY 10467

Macmillan/McGraw Hill Publishers
One Conway Park
100 Northfield Drive
Lake Forest, IL 60045

Media Systems, Inc.
757 Third Avenue
New York, NY 10017

Charles E. Merrill Publishing Co.
Div. of Macmillan
445 Hutchinson Avenue
Columbus, OH 43235

Milliken Publishing Co.
1100 Research Blvd.
St. Louis, MO 63132

National Occupational Co. Testing Institute
318 Johnson Hall
Ferris State College
Big Rapids, MI

National Textbook Co.
4255 West Touhy Avenue
Lincolnwood, IL 60646-1975

Ohio State University
Vocational Instructional
Materials Laboratory
154 W. Twelfth Avenue
Columbus, OH 43210-1302

Osborne McGraw Hill
Div. of McGraw Hill Inc.
2600 Tenth Street
Berkley, CA 94710

Paradigm Publishing Intl.
7500 Flying Cloud Drive, Ste 655
Eden Prairie, MN 55344

Prentice-Hall Press
Div. of Simon Schuster
15 Columbus Circle
New York, NY 10023

Radio Shack Education Division
1400 One Tandy Center
Ft. Worth, TX 76102-2805

Simon and Schuster
Div. of Paramont
Communications
1230 Avenue of the Americas
New York, NY 10020

Southwestern Publishing Co.
5101 Madison Road
Cincinnati, OH 45227

Tab Books
Div. of McGraw Hill
113311 Monterry Avenue
Summit, PA 17214

Teaching Aids Inc.
P.O. Box 1798
Costa Mesa, CA 92628-0798

Votech-Oklahoma State Dept. of Vocational and Technical Education
1515 West Sixth Avenue
Stillwater, OK 74074

V TECS
Commission on Education Institutions
Southern Assn. of Colleges and Schools
795 Peachtree Street
N.E. Atlanta, GA 30365

Wadsworth Publishing
Div. of Thompson Corp.
10 Davis Drive
Belmont, CA 94002

West Publishing
50 Kellogg Blvd.
St. Paul, MN 55164

Western Tape
2761 Marine Way
Mountain View, CA 94040

J. Weston Walch, Publishing
321 Valley Street
P.O. Box 658
Portland, ME 04104-0658

John Wiley and Sons, Inc.
605 Third Avenue
New York, NY 10158

SOFTWARE VENDORS

Abbot Educational Software
334 Westwood Avenue
East Longmeadow, MA 01028
(413)525-3462

Academic Software
22 E. Quackenbush Avenue
Durmont, NJ 07628

Acorn Software Products
34 North Carolina Avenue, S.E.
Washington, D.C. 20003
(202)544-4259

Activision, Inc.
P.O. Box 7287
Mountain View, CA 94030

Addison-Wesley
2725 Sand Hill Road
Menlo Park, CA 94025

Addison-Wesley Publishing Co.
Business & Professional Division
Reading, MA 01867
(617)944-3700

Advanced Systems, Inc.
2340 S. Arlington Heights Rosd
Arlington Heights, IL 60005
(312)981-4260

Aldus
411 First Avenue, SO.
Suite 200
Seattle, WA 98136

Alternate Source
1806 Ada Street
Lansing, MI 48910
(517)487-3358

Apple Computer Company
10260 Bandley Drive
Cupertino, CA 95014
(408)996-1010

Applied Educational Systems
RFD #2, Box 213
Dunbarton, NH 03301
(603)774-6151

Applied Engineering
P.O. Box 798
Carrollton, TX 75006

Applied Microsystems
P.O. Box 832
Roswell, GA 30077

Applied Software Technology
14125 Capli Drive
Los Gatos, CA 95030

Aurora Systems
2040 East Washington Avenue
Madison, WI 53704
(608)249-5875

B & B Software
P.O. Box 2090
Ann Arbor, MI 48106
(313)668-8152

Bell & Howell Micro Systems
Audio Visual Products Division
7100 North McCormick Road
Chicago, IL 60645
(312)262-1600

Betamax, Inc.
101 Nickerson Street
Suite 550
Seattle, WA 98109
(206)282-6249

Bits & Bytes
Fenner Block, 33 Church Street
Fredonia, NY 14063
(716)673-1515

Borg-Warner Educational Systems
600 West University Drive
Arlington Heights, IL 60004
(800)323-7577

Brinker Computing
2775 Tessmer Rosd
Ann Arbor, MI 48103
(313)662-6386

Broderbund
17 Paul Drive
San Rafael, CA 94903-2101

Business and Agri Services
Route 2, Box 118
Raymond, IL 62560
(217)229-3584

Career Aids
20417 Nordhoff Street, Dept. F5
Chatsworth, CA 91311

Career Publishing Inc.
P.O. Box 5486
Orange, CA 92613-5486

Comprehensive Software
2316 Artesia Blvd
Suite B
Redondo Beach, CA 90278
(213)318-2561

Compuserve
5000 Arlington Center Blvd.
Columbus, OH 43220

Computation
P.O. Box 502
Troy, MI 48099

Compu-Teach
240 Bradley Street
New Haven, CT 06511

The Computer Center
302 Commercial
Waterloo, IA 50701
(319)232-9504

Computer Information Exchange
P.O. Box 159
San Luis Rey, CA 92068
(714)757-4849

Computers Plus Company
2303 N. 44th Street #2
Phoenix, AZ 85008
(602)955-1404

Computrex Computer Services
P.O. Box 536
Inman, SC 29349

Computer House Division
1407 Clinton Road
Jackson, MI 49202
(517)782-2132

Continental Software
12101 Jefferson Blvd.
Culver City, CA 90230
(213)371-5612

Control Data Corporation
P.O. Box 261127
San Diego, CA 92126
(800)233-3784

Cook's Computer Company
1905 Bailey Drive
Marshalltown, IA 50158

Courseware, Inc.
10075 Carroll Canyon Rosd
San Diego, CA 92131
(619)578-1700

Creative Software
230 E. Caribbean Drive
Sunnyvale, CA 94089

Curriculum Applications
P.O. BOX 264
Arlington, MA 02174

Decision Data, Inc.
213 Lincoln Way
Ames, IA 50010
(515)233-4807

Design Software Inc.
Learning Services
61 West Eighth Street
P.O. Box 10636
Eugene, OR 97440-2636

Designware
345 Fourth Street
San Francisco, CA 94107

Dorsette Educational Systems, Inc.
P.O. Box 1226
Norman, OK 73070
(405)288-2300

DRW Educational Systems
P.O. Box 2941
Costa Mesa, CA 92628
(714)548-9754

Educational Activities, Inc.
P.O. Box 392
Freeport, NY 11520
(800)645-3739

Educational Courseware
Ten Bay Street
Design 66
Westport, CT 06880

Educational Microsystems, Inc.
P.O. Box 471
Chester, NJ 07930
(210)879-5982

Educational Programming Systems
1328 Baus Blvd.
St. Louis, MO 63132
(314)991-0300

Educational Programs
P.O. Box 2345
West Lafayette, IN 47906
(317)463-4778

Educational Resources
2360 Hassell Road
Hoffman Estates, IL 60195

Educational Services Management
P.O. Box 12599
Research Triangle Park, NC 27709
(919)781-1500

Educational Software Corp.
414 Rosemere
Maquoketa, IA 52060

Educational Software and Design
P.O. Box 2801
Flagstaff, AZ 86003

EDUTECH
50 Putnam Street
West Newton, MA 02165
(617)965-4813

EDUTEK Corp.
P.O. Box 11354
Palo Alto, CA 94306
(415)325-9965

Educational Testing Services
SIGI Office
Princeton, NJ 08541
(609)734-5165

Edu-ware
P.O. Box 336
Maynard, MA 01754

EMC Publishing
Changing Times Education Services
300 York Avenue
St. Paul, MN 55101

EPYX
600 Galveston Drive
Redwood, CA

Generic Software
8763 148th NE
Redmond, WA 98052

Great Plains Computers
113 Broadway
Fargo, ND 58102
(701)293-8483

Harris Laboratories
624 Peach Street, P.O. Box 8037
Lincoln, NE 68501
(402)476-2811

Hartley Courseware, Inc.
P.O.Box 431
Diamondale, MI 48821
(616)942-8987

Harvest Computer Systems
203 West 11th Street
Alexandria, IN 46001
(317)724-9527

Hayden Book Company
50 Essex Street
Rochelle Park, NJ 07662
(800)631-0856

High Technology Software Products, Inc.
P.O. Box 14665
Oklahoma City, OK 73113
(405)840-9900

Horizons Unlimited
5367 Sage
Edwards, CA 93523
(805)258-8412

Houghton-Mifflin
Educational Software Division
P.O. Box 683
Hanover, NH 03755

Individual Software, Inc.
1163-1 Chess Drive
Foster City, CA 94404
(415)341-6116

Instructional Software, Inc.
1278 Massachusetts Avenue
Cambridge, MA 02138
(617)492-0386

International Bureau of Software Testing
536 Wendell, Suite 7
Sunnyvale, CA 94086

International Micro Systems
8425 Quivara Road
Lenexa, KS 66215
(913)888-8330

Interpretive Education
2306 Winters Drive
Kalamazoo, MI 49002
(616)345-8681

Interpretive Education Incorporated
157 S. Kalamazoo Mall
Suite 250
Kalamazoo, MI 49007
(616)345-8681

IQUEST
CompuServe
5000 Arlington Center Blvd.
Columbus, OH 43220

Knoware, Inc.
301 Vassar Street
Cambridge, MA 02139
(617)576-3821

Krell Software
21 Millbrook Drive
Stony Brook, NY 11790
(518)751-5139

Learning Services
61 West Eighth Street
P.O. Box 10636
Eugene, OR 97440-2636

Lotus Development Corp.
55 Cambridge Parkway
Cambridge, MA 02142

Charles Mann & Associates
Microcomputer Division
55722 Santa Fe Trail
Yucca Valley, CA 92284
(714)365-9718

MECC
3490 Lexington Ave. North
Saint Paul, MN 55126-8097

Micro Lab Learning Center
3218 Skokie Valley Road
Highland Park, IL 60035
(312)433-7550

Micro-Comp Incorporated
2015 N.W. Circle Blvd.
Corvallis, OR 97330

Microcomputer Education Applications Network
256 N. Washington Street
Falls Church, VA 22046
(702)536-2310

Microcomputers In Education
4148 Winnetka Avenue, North
Minneapolis, MN 55427
(612)533-2781

Microcomputer Software
Illinois Vocational Curriculum Center
Sangamon State University, E-22
Springfield, IL 62708
(217)786-6375

Microcomputer Software Systems
4716 Lakewood Drive
Metairie, LA 70002

Microsoft
16011 NE 36th Way
P.O. Box 97017
Redmond, WA 98052

Microsoft Consumer Products
400 180th Avenue, N.E.
Bellevere, WA 98004
(206)454-1313

Milliken Publishing Company
1100 Research Blvd.
St. Louis, MO 63132
(314)991-4220

Minnesota Curriculum Services Center
3554 White Bear Avenue
White Bear Lake, MN 55110
(612)770-3943

Mindscape
3444 Dundee Road
Northbrook, IL 60015

Minnesota Educational Computing
Consortium Publications
2520 Broadway Drive
St. Paul, MN 55113
(800)631-8112

Muse Software
347 N. Charles Street
Baltimore, MD 21201
(301)659-7212

NCCD (National Coordinating Center
for Curriculum Development)
State University of New York
Stony Brook, NY 11794
(516)246-8418

National Software Marketing
4701 McKinley Street
Hollywood, FL 33021
(305)625-6062

Norton Computing
2210 Wilshire Blvd. #186
Santa Monica, CA 90403

Nutmeg Systems, Inc.
25 South Avenue
New Canaan, CT 06840

On-Line Systems
36575 Mudge Ranch Road
Coarsegold, CA 93614
(202)683-6858

Optical Data Corp.
66 Hanover Road
Box 97
Florham Park, NJ 07932

Pillsbury Center
Mail Center 3286
200 S. 6th Street
Minneapolis, MN 55402
(612)330-8732

Programs For Learning, Inc.
P.O. Box 954
New Millford, CT 06776

Rainbow Micro Software
1650 Piikea Street
Honolulu, HI 96818
(TRS-80 Programs)

Regency Educational Systems
4951 Airport Parkway
Dallas, TX 75248

Scholastic, Inc.
904 Sylvan Avenue
Englewood Cliffs, NJ 07632

School Microware
P.O. Box 246
Dresden, ME 04342
(207)737-4466

Silicon Express
955 E. Main Street
Columbus, OH 43213

Software Exchange
6 South Street, Box 68
Milford, NH 03055
(603)673-5144

Software Industries
902 Pinecrest
Richardson, TX 75080

Software Publishing Corp.
1901 Landings Drive
Mountain View, CA 94043

Southern Computer Systems, Inc.
P.O. Box 55473
Birmingham, AL 35255

South-western Publishing Company
5101 Madison Road
Cincinnati, OH 45227
(513)271-8811

Springboard Software, Inc.
7808 Creekridge Circle
Minneapolis, MN 55435

John Steffee, Inc.
1030 Buffalo Trail
Tyler, TX 75703

Sterling Swift Publishing Company
7901 South IH-35
Austin, TX 78744
(512)282-6840

Strictly Software
4321 N. 39th Street
Phoenix, AZ 85018
(602)955-8138

Sunburst Communications
39 Washington Avenue
Pleasantville, NY 10570

Teacher's Pet
c/o Glenn Fisher
1517 Holly Street
Berkeley, CA 94703

The Teaching Assistant
22 Seward Drive
Huntington Station, NY 11746

Teaching Tools
P.O. Box 12679
Research Triangle Park, NC 27709
(919)851-2374

Time Share Corp
Hanover, NH 03775
(603)488-3838

Timeworks, Inc.
444 Lake Cook Rosd
Deerfield, IL 60015

Visicorp
2895 Zanker Rosd
San Jose, CA 95134
(408)946-9000

Walt Disney Educational Media Co.
500 S. Buena Vista Street
Burbank, CA 91521

Westinghouse Learning Corp.
5505 West 110th Street
Oak Lawn, IL 60453

J. Weston Walch, Publisher
321 Valley Street, P.O. Box 658
Portland, ME 04104-0658

Whitney Educational Services
2071 Tenth Avenue
San Francisco, CA 94116

WordPerfect
1555 North Technology Way
Orem, UT 84057

MICROCOMPUTER DIRECTORIES

Apple Computer Education Software Directory
Visual Materials, Inc.
4170 Grove Avenue
Gurnee, IL 60031

The Apple Software Directory
WIDL Video
5245 W. Diversey Ave.
Chicago, IL 60639
(312)622-9606

Educational Software Directory
Sterling Swift Publishing Co.
1600 Fortview Road
Austin, TX 78704
Apple software only.

Educators Handbook and Software Directory
Vital Information, Inc.
7899 Mastin Drive
Overland Park, KS 66024

The Software Directory
Software Central
P.O. Box 30424
Lincoln, NE 68503

ELECTRONIC INFORMATION SERVICE

BRS/Search
1200 Route 7
Latham, NY 12110
(800)227-5277

Compuserve Information Service, Inc.
5000 Arlington Center Blvd.
Columbus, OH 43220
(800)848-8990

Datext, Inc.
444 Washington St.
Woburn, MA 01801

Dialog Information Service, Inc.
3460 Hillview Avenue
Palo Alto, CA 94304
(800)334-2564

Dow Jones/Retrieval Service
P.o. Box 300
Princeton, NJ 08540
(609)452-2000

Easynet
Telebase Systems, Inc.
134 North Narberth Avenue
Narberth, PA 19072

General Videotext Corp. (Delphi)
3 Blackstone Street
Cambridge, MA 02139

Infotrac
Information Access Company
11 Davis Drive
Belmont, CA 94002

Newsnet
945 Haverford Road
Bryn Mawr, PA 19010
(800)345-1301

Nexis/Lexis
Mead Data Central
9393 Springboro Pike
P.O. Box 933
Dayton, OH 45401
(800)227-4908

ORBIT Search Service
SDC Information Service
2500 Colorado Avenue
Santa Monica, CA 90406

The Source
1616 Anderson Road
McLean, VA 22102
(800)336-3330

TENET
c/o UT Systems
Office of Telecom Services
Service Building, Room 319
Austin, TX 78712

VUTEXT Information Services, Inc.
1211 Chestnut Street
Philadelphia, PA 19107
(215)665-3300

MAGAZINES/PERIODICALS/NEWSLETTERS/JOURNALS

Administrative Management
1123 Broadway
New York, NY 10010

Aldus Magazine
411First Avenue SO.
Seattle, WA 98104

Apple Orchard
908 George Street
Santa Clara, CA 95050

Appleworks Forum
Box 87453
Carlon, MI 48187

ARMA Qrtly—Records Management Quarterly
Suite 214
4200 Somerset Drive
Prairie Village, KS 66208

Balance Sheet
South-Western Publishing Co.
5101 Madison Road
Cincinnati, OH 45227

Business Computer Digest
4800 Riverbend Road
Boulder, CO 80301

Business Computer News
Moorshead Publications Ltd.
1300 Don Mill Road
Toronto, ONT M3B3M8

Business Computer Systems
Cahners Publishing Company, Inc.
221 Columbus Avenue
Boston, MA 02116

Business Education Film Cat.
c/o Paul Weinberg, Ed.
Box 449
Clarksville, NJ 08510

Business Education Forum
NBEA
1914 Association Drive
Reston, VA 22091

Business Education Guide
Box 2014
Newptune City, NJ 07754

Business Education World
Glencoe/McGraw-Hill
936 Eastwind Drive
Westerville, OH 43081

Business Exchange
Houghton-Mifflin Co.
One Beacon Street
Boston, 02108

Business Week
McGraw-Hill Publications Company
1221 Avenue of the Americas
New York, NY 10020

Byte: The Small Systems Journal
One Phoenix Mill Lane
Peterborough, NH 03458

Classroom Computer Learning
Peter Li, Inc.
2451 East River Rd.
Dayton, OH 45439

Compute!
324 W. Wendover Avenue, Suite 200
Greensboro, NC 26403

Computerist
Softkey Publishing
Box 110816
Tacoma, WA 98411

Computer Virus
Natl. Computer Security Assoc.
4401 A Connecticut Avenue NW
Suite 309
Washington, DC 20008

Computers & Computing Information Resources Directory
Gale Research Inc.
835 Penobocat Bldg.
Detroit, MI 48226

Computerworld
CW Communications, Inc.
Box 880
375 Cochituate Road
Framingham, MA 01701

The Computing Teacher
International Council for Computers in Education
1787 Agate Street
University of Oregon
Eugene, OR 97403

Consumer Reports
Consumers Union of United States, Inc.
256 Washington Street
Mount Vernon, NY 10553

Data Based Advisor
4010 Morena Blvd., Suite 200
San Diego, CA 92117

Data Communications
McGraw-Hill, Inc.
1221 Avenue of the Americas
New York, NY 10020

Data Entry
Data Entry Management Assoc.
101 Merritt
7 Corporate Park
Ft. Norwalk, CT 06032

Datamation
Cahners Publishing Co.
249 West 17th Street
New York, NY 10011

Delta Pi Epsilon Journal
Central Connecticut State Univeristy
Dept. of Management Information Systems
New Britain, CT 06050

Desktop Communication
48 East 43rd Street
New York, NY 10017

DTP
DT Publisher
104 Frame Road
Elkview, WV 25071

Educational Technology
Educational Technology Publications, Inc.
720 Palisade Avenue
Englewood Cliffs, NJ 07632

Electronic Learning
Scholastic Learning, Inc.
730 Broadway
New York, NY 10003

The Ergonomic Newsletter
3029 Wilshire Boulevard, Suite 200
Santa Monica, CA 90403

The Futurist
Publication of The World Future Society
4916 St. Elmo Avenue
Washington, DC 20814

Guide To Free Computer Materials
Educators Progress Service
214 Center Street
Rodlsh, WI 53956

High Technology
Technology Publishing Company
38 Commercial Wharf
Boston, MA 02110

Home Computer
Emerald Valley Publishing
Box 21910
Eugene, OR 97402

Home Office Computing
Scholastic Inc.
730 Broadway
New York, NY 10003-9538

ICP Software Business Review
International Computer Programs, Inc.
9000 Keystone Crossing
P.O. Box 40946
Indianapolis, IN 46240

IMC Journal
International Information Management Congress
345 Woodcliff Drive
Fairport, NY 14450

Incider
80 Elm Street
Petersborogh, NH 03458

Information Management
Systems Technology Software Media
PTN Publishing Company
101 Crossways Park West
Woodbury, NY 11797

Information Resources Management Journal
Pennsylvania State University at Harrisburg
Middletown, PA 17057

Information Systems News
CMP Publications
111 East Shore Road
Manhasset, NY 11030

Information Systems
Hitchcock Publishing Company
Hitchcock Building
25 West 550 Geneva Road
Wheaton, IL 60188

Infoworld
1060 Marsh Road,
Suite C-200
Menlo Park, CA 94025

Inside Hypercard
Inside Lotus 1-2-3
Inside MS-DOS
Inside MS WORD 5.5
Inside MS WORKS
Inside Windows
Inside Word Perfect
Inside Word for Windows
Cobb Group
Box 35150
Louisville, KY

Journal of Business Communication
Dept. of Management Sciences
Abilene Christian University
Abilene, TX 79699

Journal of Computer Information Systems
College of Administration
Oklahoma State University
Stillwater, OK 74078

Journal of Education for Business
4000 Albermarie Street, NNW
Washington, DC 20016

Journal of Microcomputer System Management
4000 Albermarie Street, NW
Washington, DC 20016

Kilobaud: The Small Computer Magazine
Peterborough, NH 03458

MAC World
PC World Communications, Inc.
555 DeHaro Street
San Francisco, CA 94107

Management World
Administrative Mangement Society
4622 Street Road
Trevose, PA 19047

MIS Information
Box 305
Burbank, CA 91503

Modern Office Technology
Penton/IPC, Inc.
Penton Plaza
1111 Chester Avenue
Cleveland, OH 44114

National Shorthand Reporter
118 Park Street, NE
Vienna, VA 22180

Newsweek
Newsweek, Inc.
444 Madison Avenue
New York, NY 10022

Nibble Express
52 Dominion Drive
Concord, MA 01742

The Office
Office Publications, Inc.
1200 Summer Street
Stamford, CT 06904

Office Administration and Automation
Dalton Communications, Inc.
1123 Broadway
New York, NY 10010

Office Automation
1123 Broadway
New York, NY 10010

Office Guide
Bureau of Business Practices
24 Rope Ferry Road
Waterford, CT 06385-9985

Office Guide for Working Women
Bureau of Business Practices
24 Rope Ferry Road
Waterord, CT 06385-9985

The Office Professional (Newsletter)
1316 Sam Bass Circle
Round Rock, TX 78664

Office Systems
941 Danbury Road
Box 150
Georgetown, CT 06829

Office Talks
Bureau of Business Practices
24 Rope Ferry Road
Waterord, CT 06385-9985

Open Entries
The Center for Studies in Vocational Education
Stone Building
Tallahassee, FL 32306

PC: An Independent Guide To IBM Personal Computers
Ziff-Davis Publishing Company
One Park Avenue
New York, NY 10016

PC Magazine
39 East Hanover Avenue
Morris Plains, NJ 07950

PC Novice
PC Today
120 W. Harvest Drive
Lincoln, NE 68521

PC Week (Weekly Magazine)
Ziff-Davis Publishing Company
800 Boylston Street
Boston, MA 02199

PC World
501 2nd Street, Ste 600
San Francisco, CA 94107

Personal Computing
50 Essex Street
Rochelle Park, NJ 07662

P.S. for Professional Secretaries
Bureau of Business Practices
24 Rope Ferry Road
Wateford, CT 06385-9985

Personal Publishing
191 Gary Avenue
Carol Stream, IL 60188

Popular Science Technology
Times-Mirror Magazines, Inc.
Communications Department
380 Madison Avenue
New York, NY 10017

Research in Word Processing
South Dakota Sch. of Mines and Technology
Rapid City, SD 57701

SAVVY
Savvy Company
111 Eighth Avenue
New York, NY 10011

The Secretary
Professional Secretaries International
P.O. Box 20404
Kansas City, MO 64195

Secretary's Update
133 Richmond Street W.
Toronto, Ont. M5h3M8
Canada

Software Digest
EDP Services, Inc.
7620 Turtle Turnpike
Annadale, VA

Texas Business Educator
Texas Business Education Assn.
3500 Kileen
Amarillo, TX 79109

Today's Office
United Technical Publications, Inc.
645 Stewart Avenue
Garden City, NY 11530

Training & Developmental Journal
American Society for Training and Development
(available by membership only)
600 Maryland Avenue, S.W., Suite 305
Washington, DC 20024

VOCED
2020 N. 14th Street
Arlington, VA 22201

Windows
501 Second Street
San Francisco, CA 94107

WordPerfect
270 West Center Street
Orem, UT 84057

WordPerfect Corporation Report
1555 N. Technology Way
Orem, UT 84057

Working Woman
Hal Publications, Inc.
342 Madison Avenue
New York, NY 10173

SERVICES AND REPORTS

Datapro Reports on Microcomputers
Datapro Research Corporation
1805 Underwood Blvd.
Delran, NJ 08075

Datapro Reports on Microcomputer Management
Datapro Research Corporation
1805 Underwood Blvd.
Delran, NJ 08075

Datapro Reports on Microcomputer Software
Datapro Research Corporation
1805 Underwood Blvd.
Delran, NJ 08075

Datapro Reports on Word Processing
Datapro Research Corporation
1805 Underwood Blvd.
Delran, NJ 08075

The Seybold Report on Office Systems
Seybold Publications, Inc.
Box 644
Media, PA 19063

PROFESSIONAL ORGANIZATIONS

Administrative Management Society
Maryland Road
Willow Grove, PA 19090
(215)659-4300

American Federation of Information Processing Societies, Inc.
1815 North Lynn Street
Arlington, VA 22209

American Management Association
135 West 50 Street
New York, NY 10020
(212)586-8100

American Society for Information Science
1155 16th Street, N.W.
Washington, D.C. 20036
(202)659-3644

American Society for Training and Development
P.O. Box 5307
Madison, WI 53705

American Vocational Association
2020 North 14 Street
Arlington, VA 22201
(703)522-6121

Association for Computer Users (ACU)
1133 Avenue of the Americas
New York, NY 10036
(212)265-6309

Association For Educational Communications and Technology (AECT)
1126 16th Street, N.W.
Washington, D.C. 20036
(202) 833-4180

Association for Educational Data Systems (AEDS)
1201 16th Street, N.W.
Washington, D.C. 20036
(202)833-4100

Association of Information Systems Professionals
1015 North York Road
Willow Grove, PA 19090
(215)657-6300

Association of Records Managers and Administrators
4200 Somerset, Suite 215
Prairie Village, KS 66208
(913)341-3808

Computer-Based Education Research Laboratory
University of Illinois
Urbana, IL 61801

Council for Educational Development and Research
1518 K Street, N.W.
Suite 206
Washington, D.C.

International Council for Computers in Education (ICCE)
Department of Computer and
Information Science
University of Oregon
1787 Agate Street
Eugene, OR 97403
(503)686-4408

Microcomputer Education Applications Network
256 North Washington Street
Falls Church, VA 22046

Minnesota Educational Computing Consortium (MECC)
2520 Broadway Drive
St. Paul, MN 55113
(612)376-1101

National Business Education Association
1914 Association Drive
Reston, VA 22091
(703)860-8300

National Education Association
1201 16th Street, N.W.
Washington, D.C. 20036

Nine to Five National Association of Working Women
1224 Huron Road
Cleveland, OH 44115
(216)566-9308

Office Technology Management Association
9401 West Beloit Road, Suite 101
Milwaukee, WI 53227
(414)321-0880

Professional Secretaries International
Kansas City, MO 64111
(816)531-7010

Texas Business Education Association
Bette Carpenter, Executive Secretary
3500 Kileen
Amarillo, TX 79109

Texas Computer Education Association
7131 Midbury
Dallas, TX 75230
(214)361-9472

VOETAT
Pat King
Edison High School
701 Santa Monica
San Antonio, TX 78212

APPENDIX **B**

Microcomputer Applications Competency Checklist

(4= Mastery—1=Non Mastery)

COMPETENCIES

I. Introduction to Microcomputers

1. Introduction to the Course

NONE

2. Microcomputer Systems

4 3 2 1 1. Use commonly accepted terminology related to data processing with microcomputers.
4 3 2 1 2. Trace the evolution of the personal computer in chronological order.
4 3 2 1 3. Describe each computer generation including the current generation.
4 3 2 1 4. Discuss the types of computer systems.
4 3 2 1 5. Categorize hardware devices by function.
4 3 2 1 6. Identify and describe the most widely used business systems.

3. Basic Microcomputer Operations

4 3 2 1 1. Use commonly accepted terms related to data processing operations with microcomputers.
4 3 2 1 2. Perform a "cold boot" and a "warm boot" using a standard operating system on a microcomputer.
4 3 2 1 3. Use standard commands to perform disk management, including preparing a data disk for use, copying and deleting a file, and displaying the disk directory.
4 3 2 1 4. Discuss types of software including programming languages, utitity packages, and application software.

4. Social Implications

4 3 2 1 1. Define terminology related to computer crime, computer users, and new computer devices and techniques.
4 3 2 1 2. Identify the major issues and technological developments related to computers and society.
4 3 2 1 3. Describe ethical and legal issues that have arisen as a result of the computer revolution.
4 3 2 1 4. Identify privacy issues involved with electronic data storage.
4 3 2 1 5. Explain reasons for concern about the reliability of computer systems.

COMPETENCIES

II. Word Processing

1. Introduction to Word Processing

4 3 2 1 1. Use word processing terminology.
4 3 2 1 2. Describe the steps in the document cycle.
4 3 2 1 3. Categorize the production features of word processing software.
4 3 2 1 4. Demonstrate the ability to move around documents, enter data, save a file, and edit documents.

2. Document Production Procedures

4 3 2 1 1. Classify common documents by type.
4 3 2 1 2. Format and edit documents.
4 3 2 1 3. Prepare mailable documents using a word processing program.

III. Information Management

1. Introduction to Information Management

4 3 2 1 1. Define terms related to information management.
4 3 2 1 2. Discuss the concepts of information management.
4 3 2 1 3. Explain the typical uses of microcomputer-based information management.
4 3 2 1 4. Enter and manipulate data in a database.

2. Information Management Procedures

4 3 2 1 1. Design and construct a database.
4 3 2 1 2. Access information using search and sort commands with logical operations such as and, or, and not and relate the commands to particular applications.
4 3 2 1 3. Prepare and print reports.

IV. Electronic Spreadsheets

1. Introduction to Spreadsheets

4 3 2 1 1. Use terminology associated with popular spreadsheet programs.
4 3 2 1 2. Discuss the purposes and uses for the spreadsheet.
4 3 2 1 3. Describe the form and components of a spreadsheet.
4 3 2 1 4. Demonstrate functions and procedures available with most spreadsheet pro-

COMPETENCIES

2. Spreadsheet Procedures

4 3 2 1 1. Retrieve and modify data in an electronic spreadsheet and carry out the necessary steps to report the results.

4 3 2 1 2. Analyze a simple problem that is appropriate for spreadsheet solution, and design a template that can be used to solve the problem.

4 3 2 1 3. Report the results of processing with an electronic spreadsheet in both tabular and graphic form.

V. Information Processing Tools

1. Telecommunications

4 3 2 1 1. Use terminology common to telecommunications.

4 3 2 1 2. Describe procedures for communicating with electronic bulletin boards, online information services, and facsimile transmissions.

4 3 2 1 3. Explain the concept of electronic mail.

2. Networking

4 3 2 1 1. Use terminology associated with networking.

4 3 2 1 2. Identify configurations for local area networks.

4 3 2 1 3. Describe components common to networks.

4 3 2 1 4. Discuss advantages and disadvantages of networking.

COMPETENCIES

3. Graphic Layout and Design

4 3 2 1 1. Identify terminology related to layout and design.

4 3 2 1 2. Use graphic layout and design techniques to prepare a thumbnail sketch.

4 3 2 1 3. Create a rough page layout.

4. Desktop Publishing

4 3 2 1 1. Identify and use desktop publishing terminology.

4 3 2 1 2. Describe the components of a desktop publishing system.

4 3 2 1 3. Discuss the concepts of desktop publishing.

4 3 2 1 4. Demonstrate desktop publishing tools and procedures for producing a simple publication.

VI. Closure

1. Integration of Applications

4 3 2 1 1. Explain the meaning of integrated software.

4 3 2 1 2. Perform integration applications for:

4 3 2 1 a. Mail merge from a database into word processing.

4 3 2 1 b. Spreadsheet table information into word processing.

4 3 2 1 c. Graphics and text to be imported into a desktop publishing program

2. Closure for Microcomputer Applications

NONE

APPENDIX C

Equipment

SUGGESTED MINIMUM EQUIPMENT REQUIREMENTS for a Quality Office Education program

Equipment and furniture

A computer or a terminal for each student

Macintosh/SE-hard drive 2-4 mg RAM and/or
MS-DOS 386 minimum, 2-4 MEG minimum storage and/or
PS2's 30, or above

- two disk drives, one 5 1/4" and one 3 1/2" on MS-DOS
- hard disk 80 MEG
- enhanced 101 keyboard with keypad
- high resolution monitor with graphics capability
- several expansion slots

networked systems/standalone systems

A fully equipped teacher's computer station

Monitors

- Color
- High resolution at least EGA
- Swivel/tilt monitor bases

Printers (A combination of the following printers—using one printer to each two computers as a rule of thumb)

- A 24-pin dot matrix printer with near letter quality/high speed modes
- Letter quality printers
- Laser printers (preferably Postscript)

Other computer peripherals and equipment

- Scanner
- Automatic switch boxes for switching access to each computer/terminal
- Mouse for each computer or terminal
- At least two modems and access to dedicated phone line
- Extra cables for attaching peripherals

Copy machine

Overhead projector with low heat/good cooling system

LCD computer panel for data projection

Pull-down movie screen

File cabinets and storage cupboards

Student work stations with adjustable height

Adjustable chairs, preferably rolling

Supplies

Covers and keyboard covers

Diskettes for backups of each software programs for each computer

Computer paper, both laser and regular cut

Ribbons—standard black and colors

Toner for the laser printers and copy machine

Colored diskettes—each class uses a different color.

Computer maintenance kit—including screwdrivers of various sizes, cotton swabs, alcohol, screen wipes, mini vacuum, air vacuum

APPENDIX D

Test Bank Revisions

Section 1, Unit 2—Microcomputer Systems

(originally Section 1, Unit 1)

True and False

Delete: 14-20

Add:

19. Napier's Bones was the first counting machine.
20. Charles Babbage is known as the "father of computers."
21. The MARK I was the first commercial computer.
22. T. J. Watson, Sr. bought Hollerith's company and changed the name to IBM.
23. Nolan Bushnell developed the first BASIC program in 1964 to make computer usage easier for everyone.
24. Mitch Kapor developed *Lotus 1-2-3*.
25. The first generation of computers was characterized by having problems with heat and maintenance.
26. The fourth generation of computers used transistors.
27. The third generation of computers used the integrated circuit.
28. The fifth generation of computers uses terminology very close to normal English syntax.
29. The sixth generation of computers is very well defined.
30. Minicomputers are the smallest computers currently available.
31. The CRAY computer is an example of a mainframe.
32. Supercomputers are large computers with fast processing speeds that can access billions of characters of data.
33. MS-DOS is the only type of computer system available on the market today.
34. The 80486 is slower than the powerful 80386.
35. The 80286 is a 16-bit processor running at 6 to 20 Mhz.
36. The Apple IIgs is the oldest of the Apple family.
37. The Macintosh is not as widespread in business as MS-DOS, but it performs graphics applications well.

Multiple Choice

Delete: 1, 2, 5, 15, 23, 27-43, 46, 48, 50

Add:

24. The name of the chip which contains instructions to tell the processor where to look for information on how to operate DOS is:
    A. ROM Chip
    B. Microprocessor Chip
    C. IBM Chip
    D. RAM Chip

25. A hard disk:
    A. Has massive storage capacity.
    B. May be divided into directories.
    C. Eliminates the need for disk-swapping.
    D. All of the above.

26. A modem is:
    A. The versatile and extensive operating system for IBM compatible computers.
    B. A command used to display the listing of files on a disk.
    C. A feature of MS-DOS which allows a command to be performed on more than one file at once.
    D. A device for communicating between computers over telephone lines.

27. A characteristic of a supercomputer is:
    A. It uses a single microchip.
    B. It is the largest and fastest computer.
    C. It cannot support large networks.
    D. It can be easily moved.

28. A characteristic of a microcomputer is:
    A. It uses a single microchip.
    B. It is the largest and fastest computer.
    C. It cannot support large networks.
    D. It cannot be easily moved.

29. A characteristic of a minicomputer is:
    A. It uses a single microchip.
    B. It is the largest and fastest computer.
    C. It cannot support large networks.
    D. It can be easily moved.

30. How much memory was available with the MS-DOS 8088 computer?
    A. 16K
    B. 2K
    C. 120K
    D. 640K

31. Which of the following computer systems has a math coprocessor included to speed up calculations?
    A. 80286
    B. 8088
    C. 80486
    D. 8086

32. Which of the following is considered an AT computer?
    A. 80286
    B. 8088
    C. 80486
    D. 8086

33. Which of the following Apple systems is most commonly used in the area of elementary education?
    A. Macintosh 68020
    B. Apple IIc/IIe
    C. Macintosh SE
    D. Macintosh 68040

34. Which of the following allows Macintosh systems to communicate with MS-DOS systems?
    A. *DOSTalk*
    B. *CrossTalk*
    C. *MACTalk*
    D. *OverTalk*

Fill in the Blank

Delete: 1, 2, 12-17

Add:

_____________________ 13. The _____ is a device for communicating between computers using telephone lines.

_____________________ 14. A _____ _____ is a very valuable asset to a computer system because it eliminates the need for spending time to swap disks.

_____________________ 15. The _____ is made up of thousands of tiny pixels (dots of light).

_____________________ 16. Resolution is the number of _____ used to make up an image on the monitor screen.

_____________________ 17. H. Ross Perot created _____ which was the largest computer service firm in the world.

_____________________ 18. Daniel Bricklin developed _____ which was the first spreadsheet.

_____________________ 19. The CRAY and the _____ are the two best-known examples of supercomputers.

_____________________ 20. A _____ is the amount of desk space a computer will require, and it also classifies the computer.

Essays

Add:

3. List three computer generations and give one characteristic for each.
4. Describe the type of microcomputer system being used in your classroom (MS-DOS or Apple family).

ANSWERS

True and False

19. F
20. T
21. F
22. T
23. F
24. T
25. T
26. F
27. T
28. T
29. F
30. F
31. F
32. T
33. F
34. F
35. T
36. F
37. T

Multiple Choice

24. A
25. D
26. D
27. B
28. A
29. A
30. D
31. C
32. A
33. B
34. B

Fill in the Blank

13. Modem
14. Hard drive
15. Monitor
16. Pixels
17. EDS
18. VisiCalc
19. CYBER
20. Footprint

Essays

3. Any three of the following may be used. Evaluated to the satisfaction of the instructor.
    1. First generation (1952 to 1958)
        a. Used vacuum tubes.
        b. Were very slow, expensive to run and build, and unreliable.
        c. Had problems with heat and maintenance.
    2. Second generation (1959 to 1964)
        a. Used transistors, which were smaller and required less power than vacuum tubes.
        b. Computers could now be programmed with English-like commands instead of numbers.
    3. Third generation (1965 to 1970)
        a. Used the integrated circuit.
        b. Circuits were developed on single chips of silicon.
        c. Were about 900 times faster than first generation computers.
    4. Fourth generation (1971 to 1987)
        a. Microprocessors were derived from integrated circuits.
        b. Roughly 100 times smaller than first generation computers and fit easily on an office desk.
    5. Fifth generation (1988 to 1991)
        a. Based on the beginning of artificial intelligence operating systems.
        b. Used terminology very close to normal English syntax.
        c. Can be programmed with huge banks of data based on expert opinion.
    6. Sixth generation (1992)
    Characteristics are still disagreed upon by experts; therefore, this generation is still obscure.
4. Evaluated to the satisfaction of the instructor.

Section 1, Unit 3—Basic Microcomputer Applications

True and False

Delete: 2, 7-10, 14, 15, 17, 20, 21,23, 25, 26

Add:

14. Public domain programs are available through organizations, bulletin boards, or individuals.

15. Computer manufacturers are now the major source of programs.

16. Magazines are the major vehicle for software advertising.

17. Software varies in quality as well as price.

18. A cold boot is the same as resetting the computer.

19. Macintosh systems have no warm boot feature.

20. Any information not previously saved will be saved during a warm boot.

Multiple Choice

Delete: 2, 5-7, 9-11, 13, 16-18, 23, 26, 27, 33, 34, 38-40, 46, 47

Add:

27. _____ programs deal with the processing of words for research papers, books, etc.
A. Database
B. Spreadsheet
C. Utility
D. Word processing

28. _____ programs perform mathematical calculations on columns and rows of numbers.
A. Database
B. Spreadsheet
C. Utility
D. Word processing

29. _____ programs are designed to organize and sort lists of information.
A. Database
B. Spreadsheet
C. Utility
D. Word processing

30. _____ programs have advanced more than in any other area.
A. Communication
B. Graphic
C. Utility
D. Word processing

31. _____ programs allow computers to interact with other computers over phone lines.
A. Communication
B. Database
C. Utility
D. Word processing

32. Integrated packages offer several programs in one. Which of the following is an example of an integrated package?
A. Excel
B. MicroSoft Word
C. Pagemaker
D. Lotus Works

33. _____ programs are designed to enhance and improve personal computer operations.
A. Communication
B. Graphic
C. Utility
D. Word processing

34. Which of the following is NOT a programming language?
A. BASIC
B. Macro Assembler
C. Norton
D. Pascal

35. _____ advertise nationally and produce versions of their popular programs for all of the popular computers.
A. Computer manufacturers
B. Individuals
C. Software publishers
D. User groups

36. Which of the following is considered a stand-alone word processing program?
A. Dbase III
B. Lotus 1-2-3
C. MicroSoft Works
D. Word Perfect

37. Of the following, _____ is used as a standalone spreadsheet program.
A. Quattro
B. Reflex
C. Symphony
D. Tornado

38. _____ is a standalone database program, one which organizes and sorts lists of information.
A. Quattro
B. Reflex
C. Symphony
D. Ventura

39. _____ is a graphics program that is designed specifically for the graphic representation of data.
A. Apple Works
B. Multiplan
C. Paradox
D. AutoCAD

40. _____ contains utilities, language processor, and a user interface shell.
A. Harvard Graphics
B. Macro Assembler
C. Multiplan
D. Pro-DOS

41. An example of a utilities program is _____.
A. Excel
B. FORTRAN
C. Quattro
D. Tornado

42. Which of the following computer systems does not have a warm boot feature?
A. IBM
B. Macintosh
C. Tandy
D. Apple

43. Which of the following keys is NOT used to perform a warm boot on a MS-DOS system?
A. <Tab>
B. <Ctrl>
C. <Alt>
D. <Delete>

44. Which of the following keys is NOT used to perform a warm boot on an Apple system?
A. <CONTROL>
B. <APPLE>
C. <OPEN>
D. <ALT>

45. Which of the following is a TRUE statement?
A. Pressing the reset button on the front of a MS-DOS system will perform a COLD boot.
B. A COLD boot is used to escape from a program if the computer has locked up.
C. Any information not previously saved will be lost during a warm boot.
D. On an Apple system, the combination keys will always perform a warm boot.

Matching

A. CD
B. Cold boot
C. COPY
D. DEL
E. Directory
F. Editing
G. File
H. Format
I. Multitasking
J. Operating system
K. Path name
L. Pro-DOS
M. RD
N. Rename
O. Root directory
P. Subdirectory
Q. Warm boot
R. Wildcards

1. Command used to erase a directory that is no longer needed.
2. The best and most current operating system for Apple IIc, IIe, and IIgs microcomputers.
3. File that keeps track of where other files are stored, like an address book.
4. An operation that allows more than one program to run at the same time.
5. Command used to change the current path to another directory or subdirectory.
6. Specific characters that can be anything; shortcuts for handling several files at once.
7. Changes the name of a file without changing its contents.
8. Collection of information stored on a disk.
9. Command that initializes a disk according to the specific format of the computer being used.
10. Powers up the computer.
11. Listing of the files located within a directory that has been divided.
12. A set of commands and files that contains the information the computer needs to access the disk drives of the system.
13. Command that erases one or more files from the specified disk drive.
14. Making changes in existing data.
15. The most basic directory that branches out into directories and subdirectories.

Fill in the Blank

Delete: 1-3, 6, 7, 17-19

Add:

____________________ 12. A set of instructions that tells the computer where and how to communicate with disk drives, monitors, keyboards, and other devices is called _____.

____________________ 13. _____ is the primary operating system for IBM microcomputers.

____________________ 14. _____ software is the pre-packaged software that is usually bought for operating microcomputers.

____________________ 15. A warm boot is another name for _____ the computer while it is on.

Essays

Add:

2. Explain how to perform a cold boot and a warm boot on the computer system you are using.
3. List three software sources.

ANSWERS

True and False

14. T
15. F
16. T
17. T
18. F
19. T
20. F

Multiple Choice

27. D
28. B
29. A
30. B
31. A
32. D
33. C
34. C
35. C
36. D
37. A
38. B
39. D
40. D
41. D
42. B
43. A
44. D
45. C

Matching

1. M
2. L
3. E
4. I
5. A
6. R
7. N
8. G
9. H
10. B
11. P
12. J
13. D
14. F
15. O

Fill in the Blank

12. Operating system
13. MS-DOS
14. Application
15. Resetting

Essays

2. Evaluated to the satisfaction of the instructor.
3. Any three of the following may be listed:
    a. Public domain or shareware programs
    b. Computer manufacturers
    c. Software publishers
    d. Magazines
    e. Retail computer stores

Section 1, Unit 3—Social Implications

(originally Section 7, Unit 1)

Complete Revision—add all the following questions

True and False

1. Our society is NOT dependent on computers.
2. Computers do less and less each year.
3. Our society is becoming a "nameless society" through the use of more computers and more numbers.
4. Artificial Intelligence is being used in robotics.
5. Robotics CANNOT be used on assembly lines.
6. CD-ROM is being used in libraries.
7. Hypergraphics is a method of teaching that involves both people and computers.
8. Computer viruses do NOT really exist.
9. A computer virus can destroy a computer system.
10. Computer crime involves ONLY viruses.
11. Computer crime is defined as breaking ONLY written laws.
12. Large corporations ALWAYS report computer crime.
13. Data spies normally only look at data but do NOT destroy it.
14. Hackers are computer enthusiasts who normally only look at data.
15. Computer piracy involves copying computer software illegally.
16. Computer piracy does NOT break the copyright law.
17. Privacy is NOT an issue when discussing computer ethics.
18. Our nation currently has a giant data bank with everyone's name in it.
19. The paperless office means that everyone talks to one another rather than using paper documents.
20. Computer systems are ALWAYS reliable.

Multiple Choice

1. Which of the following is a reason our society is becoming "nameless"?
   A. Credit cards
   B. Driver's licenses
   C. Social security numbers
   D. All of the above
2. Artificial Intelligence is being used in all of the following EXCEPT:
   A. Expert systems
   B. Networks
   C. Robotics
   D. Decision support systems
3. Which of the following is a robotic application?
   A. Warehousing
   B. Handling radioactive materials
   C. Mail carriers in large firms
   D. All of the above

4. Which of the following is NOT a characteristic of a computer CD-ROM?
   A. Plays music
   B. Same size as a floppy disk
   C. Stores files of historical material
   D. Holds a gigabyte or more

5. Which of the following is NOT a computer virus?
   A. Israeli virus
   B. Alameda virus
   C. American viru.
   D. Trojan Hors.

6. All of the following are reasons why computer crime is difficult to prosecute EXCEPT:
   A. The criminals are being hired as consultants.
   B. No laws exist.
   C. Large firms "hush up" the crime.
   D. Corporations do not want to lose their stockholders.

7. All of the following are types of computer crime EXCEPT:
   A. Loss of data
   B. Piracy
   C. Data spying
   D. Hacking

8. Which of the following is a FALSE statement concerning computer ethics?
   A. The copyright law does not cover computer software.
   B. Piracy has become a "big business."
   C. Viruses have been put on software programs to stop illegal copying.
   D. Software programs are easy to copy.

9. Which of the following is NOT a privacy issue?
   A. Control over the data is lost.
   B. Private information can be read by anyone who has access to it.
   C. No one else can look at computer data except the person receiving the information.
   D. Paper documents can be locked away, but electronic data cannot.

10. Which of the following is NOT performed by credit bureaus?
   A. Keep up-to-date records
   B. Gather data from many sources
   C. Both A and B
   D. None of the above

11. In a paperless office, which of the following is a method of security?
   A. Encryption
   B. Hacking
   C. Piracy
   D. Data spying

12. The reliability of computer systems involves:
   A. Hardware
   B. People
   C. Software
   D. All of the above

13. Which of the following is the BEST method of preventing loss of data?
   A. Maintenance
   B. Backup information
   C. Equipment replacement
   D. None of the above

14. Which of the following statements about computer software is TRUE?
   A. Programs never have bugs.
   B. Programs seldom run.
   C. Programs always have bugs.
   D. None of the above.

15. Which of the following is a type of storage media?
   A. Magnetic tape
   B. Hard disks
   C. Floppy disks
   D. All of the above

16. Which of the following is NOT a characteristic of the Pakistani Brain virus?

A. It infects any .COM or .EXE program.
B. Adds seven sectors which contain the remainder of the virus.
C. Flags all modified sectors as unusable to protect itself.
D. Replicates itself onto all inserted bootable floppies.

17. Which of the following is NOT a characteristic of the Scores virus?

A. Increases application size by 7000 bytes.
B. Creates invisible Scores and Desktop files.
C. Replaces original boot sector with itself.
D. Looks for existence of specific file names for destruction.

18. Which of the following is NOT a characteristic of the Israeli virus?

A. Programs are infected when they are executed in the infected system.
B. Infects the boot sector.
C. Floppy or hard disks can become infected.
D. Seeks out new hosts at 3½-minute intervals.

19. Which of the following is NOT a characteristic of the nVIR virus?

A. Infects the COMMAND.COM file only.
B. Appears in many different varieties.
C. Once a system is infected, every application executed is infected.
D. Each variety has its own individual activation characteristics.

20. Which of the following is NOT a characteristic of the Alameda virus?

A. Replaces the original boot sector with itself.
B. Infects through software re-boot sequence.
C. Stores the original boot sector on the first free sector.
D. The original boot sector is flagged as unusable.

21. Which of the following is NOT a characteristic of the Lehigh virus?

A. Changes creation date and time.
B. Activates after ten infections.
C. Infects COMMAND.COM file.
D. Destroys all system data.

22. Which of the following is a characteristic of the datacrime virus?

A. Infects the COMMAND.COM file.
B. Replaces the original boot sector.
C. Breaks down the directory section.
D. Infects any .COM or .EXE program.

23. Which of the following checks for a certain action such as checking the infected program for a preset number of executions?

A. Time Bomb virus
B. Trojan Horse
C. Logic Bomb virus
D. Trap Doo.

24. Which of the following checks for a specific date or time such as Friday the 13th before executing its objective?

A. Time Bomb virus
B. Trojan Horse
C. Logic Bomb virus
D. Trap Door

25. Which of the following is a programmer's placement of unauthorized instruction in a computer operating system for future use in gaining access to restricted information?

A. Peace virus
B. Trojan Horse
C. Logic Bomb virus
D. Trap Doo.

26. Which of the following is a segment of code that allows data to be transmitted to the legitimate operator while other data are transferred to an illegal operator?

A. Peace virus
B. Trojan Horse
C. Logic Bomb virus
D. Trap Door

510

27. Which of the following is a type of virus that was created to spread a greeting and then erase its own instructions, disappearing without a trace?
A. Peace virus
B. Trojan Horse
C. Logic Bomb virus
D. Trap Door

28. Which of the following is NOT a characteristic of a network worm?
A. Attacks systems that are linked via communication lines.
B. Destroys the boot sector.
C. May be found in programs that use network connections.
D. May behave like a virus or it can plant a virus.

29. Which of the following viruses do NOT attack IBM or IBM-compatible computer systems?
A. nVIR virus
B. Pakistani Brain virus
C. Israeli virus
D. Alameda virus

30. Which of the following viruses attack a Macintosh computer system?
A. Lehigh virus
B. Datacrime virus
C. Scores virus
D. Peace virus

Matching 1

A. Activation
B. Activation period
C. Artificial Intelligence
D. CD-ROM
E. Computer crime
F. Computer ethics
G. Data spying
H. Decision support system
I. Encryption
J. Expert system
K. Hacker
L. Host program
M. Hypergraphics
N. Infection
O. Isolation
P. Piracy
Q. Robotics
R. Viral variety

1. The science that deals with robots, their construction, capabilities, and applications.

2. The invasion of a virus into a host system.

3. The unauthorized copying of a computer program written by someone else.

4. A term describing data that has been translated into a secret code for security reasons.

5. A form of illegal access to data.

6. Any illegal act for which knowledge of computer technology is used to commit the offense.

7. The final phase of the virus life cycle.

8. A program that mimics the decision-making logic of human experts.

9. A method used in classrooms or in-service training that involves the participants, the teacher, and the computer through the use of a response pad and an interconnection box.

10. A field of study involving techniques under which computers can formulate responses on the basis of content of accumulated and experience-related information.

11. A term used to describe computer enthusiasts who are challenged by the practice of breaking computer security measures designed to prevent unauthorized access to a particular computer system.

12. An information-producing system aimed at a particular decision a manager must make.

13. A term used to refer to the standard of moral conduct in computer use.

14. The process a virus uses to identify and distinguish itself from its host program.

15. The current compact disks for computers, similar to read-only memory.

Matching 2

A. Alameda virus
B. Computer virus
C. Datacrime
D. Hidden virus
E. Israeli virus
F. Lehigh virus
G. Logic Bomb
H. Network worms
I. nVIR
J. Pakistani Brain virus
K. Peace virus
L. Replication
M. Scores virus
N. Time Bomb
O. Trap Door
P. Trojan Horse
Q. Vaccine
R. Virus remnant

1. A program that watches for typical things viruses do, halts them and then warns the computer operator.
2. A virus that breaks down the directory section, making it impossible for the disk's contents to be read.
3. Replaces the original boot sector with itself; causes loss of data.
4. A segment of code that allows data to be transmitted to the legitimate operator while other data are transferred to an illegal operator.
5. A virus that leaves no external signs of its presence after infection.
6. A virus that checks for a certain action, as if an infected program has been executed a preset number of times.
7. Infects any application; loss of data due to system crashes.
8. A segment of machine-language code that replaces software or data with a copy of itself without authorization.
9. A virus that checks for a specific date or time before executing its objective.
10. Infects any .COM or .EXE program; some versions destroy all data on the hard disk; stored programs will disappear.
11. Appears in many different varieties, each with its own individual activation characteristics.
12. Infects COMMAND.COM file; causes loss of all data on the hard disk.
13. Replaces original boot sector with itself; system crash can cause loss of data; spreads quickly to all bootable disks.
14. A programmer's placement of unauthorized instructions in a computer operating system for future use in gaining access to restricted information.
15. A type of virus that was created to spread a greeting of world peace and then erase its own instructions, disappearing without a trace.

Fill in the Blank

Place the appropriate word or words in the blank.

____________________ 1. ________ crime is any illegal act for which knowledge of computer technology is used to commit the offense.

____________________ 2. A computer __________ is a segment of machine-language code that replaces software or data with a copy of itself without authorization.

____________________ 3. A(n) __________ is a person who is challenged by trying to break computer security.

____________________ 4. The ________ virus leaves no external signs of its presence after infection.

____________________ 5. The ________ office implies that most paper documents have been replaced by electronic devices.

________________ 6. If all those living in a society are known by a number, the society is said to be ________.

________________ 7. Hypergraphics can be used in a(n) ________ or as a training device.

________________ 8. The improper care of equipment and disks can cause serious problems, such as loss of ________.

________________ 9. Private or secret data should always be kept ________.

________________ 10. The number one cause of data loss is ________.

Essays

1. List two types of computer viruses and give a brief description of each.
   1)

   2)

2. In your opinion, how could the reliability of computer systems be increased?

ANSWERS

True and False

1. F
2. F
3. T
4. T
5. F
6. T
7. T
8. F
9. T
10. F
11. F
12. F
13. T
14. F
15. T
16. F
17. F
18. F
19. F
20. F

Multiple Choice

1. D
2. B
3. D
4. A
5. C
6. B
7. A
8. A
9. C
10. C
11. A
12. D
13. B
14. C
15. D
16. A
17. C
18. B
19. A
20. D
21. B
22. C
23. C
24. A
25. B
26. D
27. A
28. B
29. A
30. C

Matching 1

1. Q
2. N
3. P
4. I
5. G
6. E
7. A
8. J
9. M
10. C
11. K
12. H
13. F
14. O
15. D

Matching 2

1. Q
2. C
3. A
4. O
5. D
6. G
7. M
8. B
9. N
10. E
11. I
12. F
13. J
14. P
15. K

Fill in the Blank

1. Computer
2. Virus
3. Hacker
4. Hidden
5. Paperless
6. Nameless
7. Classroom
8. Data
9. Confidential
10. Carelessness

Essay

1. Any two of the following may be chosen. The descriptions are to be evaluated to the satisfaction of the instructor.
    1) Pakistani Brain
    2) Scores
    3) Israeli
    4) nVIR
    5) Alameda
    6) Lehigh
    7) Datacrime
    8) Logic Bomb
    9) Network worms
    10) Time Bomb
    11) Trojan Horse
    12) Trap Door
    13) Peace
    14) Others discussed
2. Evaluated to the satisfaction of the instructor.

Section 1

Test Bank Matrix

Section		Question Types				
Unit	**Comp.**	**T/F**	**MC**	**Match**	**Fill-in**	**Essay**
2	1		24-26	1-20	1-3, 12-14, 16	1
	2	19-24	10-12		10,11,17,18	2
	3	25-29	13-16			3
	4	30-32	27-32		19,20	
	5	1-18	1-9, 17-26		4-9, 15	4
	6	33-37	33-34			
3	1	1,3,6	1-3,13,18	1-15	12	
	2	5,18,20	26, 42-45		15	2
	3	2-6, 6-13	4-12, 14-17, 19-25		1-11, 13	1
	4	14-17	27-41		14	3
4	1			All	1-5	
	2	1-9	1-5, 16-30		6,7	1
	3	10-16	6-8		9	
	4	17-19	9-11			
	5	20	12-15		8,10	2

Section 2, Unit 1—Introduction to Word Processing

Section 1, Unit 2—Keyboarding Techniques should be used in conjunction with this unit.

True and False

Delete: 7, 8, 12-14, 16-19, 21, 23

Add:

16. The insert and replace function key gives the user two options for editing text.

17. The microcomputer has virtually replaced the typewriter as the most popular tool for producing personal and professional documents.

18. Editing refers to many features related to spacing and arrangement of text.

19. Searching finds one or all occurrences of a selected text.

20. A designated text can be found and replaced with an optional text using a searching option.

Multiple Choice

Delete: 26-39, 44, 45, 47-49

Add:

32. The president of the company wants his/her business correspondence to have straight left and right margins. Which formatting choice would you use?
    - A. Justification
    - B. Page length and vertical spacing
    - C. Margins
    - D. Tabs and indentation

33. Which formatting feature allows for blank space above, below, and on either side of the text?
    - A. Tabs and indentation
    - B. Justification
    - C. Margins
    - D. Page length and vertical spacing

34. Which formatting feature allows the user of the word processing program to line up the information on either or both sides of the text?
    - A. Tabs and indentation
    - B. Justification
    - C. Margins
    - D. Page length and vertical spacing

35. Which formatting feature controls the information which is to appear at the top or bottom of each page?
    - A. Headers, footers, and page numbering
    - B. Page length and vertical spacing
    - C. Tabs and indentations
    - D. Margins

36. When a paragraph of text needs to be moved ten spaces from both left and right margins, which formatting feature will be the correct choice?
    - A. Headers and footers
    - B. Page length and page numbering
    - C. Tabs and indentations
    - D. Margins

37. When information can be lined up with a straight margin on the left, on the right, or both, the user of the word processing softwarewill choose the:
- A. tabs and indentation formatting feature.
- B. page length formatting feature.
- C. justification formatting feature.
- D. margins formatting feature.

38. Which of the following is NOT an example of a formatting option?
- A. Margins
- B. Justification
- C. File management
- D. Tab stops

39. Which of the following is an editing feature?
- A. Cut and paste
- B. Macros
- C. Split screen
- D. Page numbers

40. This arrangement choice allows the user to position the left and/or right margins in a straight line.
- A. Tabs and indentation
- B. Margins
- C. Page length and vertical spacing
- D. Justification

Matching

A. Block
B. Center
C. Copy
D. Cut and paste
E. Edit
F. Footer
G. Hardcopy
H. Hyphenation
I. Indent
J. Insert
K. Justify
L. Margin
M. Orphan
N. Pitch
O. Ruler
P. Scrolling
Q. Tab
R. Widow

1. The specified amount of space to the left, right, top, and bottom of the text area.

2. To remove a block from one part of a document and place it in another location.

3. A feature which permits dividing words at the end of a line, permitting a more even right margin.

4. The first line of a paragraph that is printed at the bottom of a page, before a page break.

5. To add characters within existing text and move the following portions to create the needed space.

6. A line of text repeated at the bottom of each page.

7. To balance text or headings between margins.

8. Moving a portion of the text on screen into view.

9. Print with straight margins on both sides.

10. Written, typed, or printed copy; a document.

11. A selected portion of text which can be operated upon as a unit.

12. A present distance from the left margin to which the cursor can be moved with a single keystroke.

13. The last line of a paragraph that is printed at the top of a page after a page break.

14. To enlarge the margin for selected portions of the text.

15. A guide displayed on the screen of some word processors to assist in formatting.

Essays

Delete: 2

Add:

2. Categorize the production features of the word processing program you are using.

ANSWERS

True and False

16. T
17. T
18. F
19. F
20. T

Multiple Choice

32. A
33. C
34. B
35. A
36. C
37. C
38. C
39. A
40. D

Matching

1. L
2. D
3. H
4. R
5. J
6. F
7. B
8. P
9. K
10. G
11. A
12. Q
13. M
14. I
15. O

Essays

2. Evaluated to the satisfaction of the instructor.

Section 2, Unit 2—Document Production Procedures

True and False

Delete: 1, 5, 6, 8, 11-24

Add:

7. The recipient is the person who will receive the memo.
8. When preparing a memo, the guide words must ALWAYS be used.
9. The subject line identifies the person who initiated the memo.
10. The guide words in a memo should be keyed in at the right margin in all caps and double-spaced.
11. The letterhead is a printed heading containing the name and address of the company.
12. The salutation closes a business letter.
13. The reference line identifies the subject of the letter.
14. The enclosure notation is used if additional materials are included with the letter.
15. The standard side margins for a long letter are 2 inches.
16. The bottom margins on all pages should be at least 1 inch.
17. The block style is sponsored by the Administrative Management Society.
18. The modified block style has all lines beginning at the left margin except for the dateline, the complimentary close, and the signature line which begin at the center of the page, and the first line of paragraphs, which are indented five spaces.
19. Open punctuation is most commonly used in business.
20. When using mixed punctuation, a colon is placed after the salutation and a comma is placed after the complimentary close.
21. When preparing to write a business report, the problem or purpose of the report should NOT be determined.
22. A long memorandum is considered a formal report.
23. The synopsis is a basic part of a formal report.
24. The appendix in a formal report provides additional, but not vital, information at the end of the report.
25. Columnar reports should have the entire table centered both vertically and horizontally.

Multiple Choice

Delete: 3, 4, 7, 9, 11, 13, 14, 16, 18, 19, 21, 24, 25-30, 32-43

Add:

14. Which of the following is NOT a part of a memorandum?
    A. Dateline
    B. Inside address
    C. Recipient
    D. Sender

15. Which of the following is a typical part of the memorandum format?
    A. The salutation is used to address a specific person or company four lines after the subject line.
    B. The complimentary close is keyed in one blank line after the dateline.
    C. The inside address is placed 2 inches from the bottom of the letterhead.
    D. Usually guide words are used and the body is keyed in block style.

16. Which of the following is NOT a part of a business letter?
    A. Outline
    B. Inside address
    C. Signature line
    D. Reference line

17. Which of the following is considered a special part of a business letter?
    A. Endnotes
    B. Subject line
    C. Complimentary close
    D. Title page

18. When using standard margins for a business letter, what margins should be used for a long letter?
    A. 1 inch
    B. 1.5 inch
    C. 2 inches
    D. 2.5 inches

19. When using standard margins for a business letter, what margins should be used for a medium length letter?
    A. 1 inch
    B. 1.5 inch
    C. 2 inches
    D. 2.5 inches

20. When using standard margins for a business letter, what margins should be used for a short letter?
    A. 1 inch
    B. 1.5 inch
    C. 2 inches
    D. 2.5 inches

21. When using standard margins for a business letter, what margins should be used for a bottom margin on all pages?
    A. 1 inch
    B. 1.5 inch
    C. 2 inches
    D. 2.5 inches

22. Which of the following styles has all lines beginning at the left margin and is one of the more popular letter styles in business?
    A. AMS simplified style
    B. Block style
    C. MLA style
    D. Modified block style

23. Which of the following styles has all lines beginning at the left margin except for the dateline, the complimentary close, and the signature line which begin at the center of the page, and the first line of paragraphs, which are indented five spaces?
    A. AMS simplified style
    B. Block style
    C. MLA style
    D. Modified block style

24. Which of the following styles includes full-block to the left, the inside address begins on the fourth line below the date, no salutation, the subject line is in all capital letters two blank lines below the address, and the body of the letter begins two blank lines below the subject line?
A. AMS simplified style
B. Block style
C. MLA style
D. Modified block style

25. Which of the following should be performed when preparing to write a business report?
A. Write the final draft.
B. Select punctuation style.
C. Select the proper letterhead.
D. Prepare an outline of facts and ideas.

26. Which of the following is a basic part of a formal report?
A. Bibliography
B. Synopsis
C. Title fly
D. Letter of authorization

27. Which of the following is a supplementary part of a formal report?
A. Table of contents
B. Body
C. Title page
D. Letter of transmittal

28. When preparing columnar reports, which of the following depends upon the table?
A. Body
B. Column heading
C. Margins
D. Title

29. When preparing columnar reports, which of the following is centered and keyed in all caps?
A. Body
B. Column heading
C. Margins
D. Title

30. When preparing columnar reports, which of the following begins two blank lines down from the title?
A. Body
B. Column heading
C. Margins
D. Title

Matching

Delete: The entire test.

Fill in the Blank

Delete: 1, 2, 4, 6, 8, 9

Add:

______________________ 4. The _____ initials identify the person who initiated the memo and the person who keyed in the memo.

______________________ 5. Some of the guide words can be omitted, but the guide word _____ must remain.

______________________ 6. A _____ or a diagonal line separates the two sets of reference initials.

______________________ 7. The signature line includes the name and the _____ of the writer of the letter.

______________________ 8. _____ are references listed at the end of the report referring to specific portions of directly or indirectly quoted text.

____________________ 9. The letter of _____ is the message that assigns responsibility for writing the report to the author.

____________________ 10. The letter of _____ is a message from the author to the reader.

Essays

Add:

2. Discuss the three letter styles comparing and contrasting their similarities and their differences.

ANSWERS

True and False

7. T
8. F
9. F
10. F
11. T
12. F
13. F
14. T
15. F
16. T
17. F
18. T
19. F
20. T
21. F
22. F
23. F
24. T
25. T

Multiple Choice

14. B
15. D
16. A
17. B
18. A
19. B
20. C
21. A
22. B
23. D
24. A
25. D
26. A
27. D
28. C
29. D
30. B

Fill in the Blank

4. Reference
5. TO
6. Colon
7. Title
8. Endnotes
9. Authorization
10. Transmittal

Essays

2. The following may used as a guideline. Evaluated to the satisfaction of the instructor.
    1. **Block style** has all lines beginning at the left margin. This style is one of the more popular letter styles in business because it is easy to set up, which saves time.
    2. **Modified block style** has all lines beginning at the left margin except for the dateline, the complimentary close, and the signature line which begin at the center of the page, and the first line of paragraphs, which are indented five space. This style is not used often because it is difficult to do on computers.
    3. **AMS simplified style** is sponsored by the Administrative Management Society. The format characteristics include full-block to the left, the inside address begins on the fourth line below the date, no salutation, the subject line is in all capital letters two blank lines below the address, and the body of the letter begins two blank lines below the subject line.

Section 2

Test Bank Matrix

Section		Question Types				
Unit	Comp.	T/F	MC	Match	Fill-in	Essay
1	1	1,13,18	27,28,31	1-15		
	2	2,3,5,6,17	1-4, 7-13			1
	3	4,7-12, 14-16, 19,20	5,6,14-26, 29,30,32-40			2
	4					
2	1	1-14, 24,25	1-17			1
	2	15-23	18-30		1-6	2
	3				7-10	

Section 3, Unit 1—Introduction to Information Management

True and False

Delete: 2-7, 10

Add:

4. A database is a form of information management.
5. Business is the only area that database applications can be used.
6. Databases decrease repetitive work.
7. Databases increase the accuracy but decrease the integrity of data.
8. Databases increase efficiency because results are obtained much faster.
9. One advantage of using a database is data can be added, deleted, or changed without retyping or making messy corrections.
10. One disadvantage of using a database is all occurrences of a record can be deleted at one time.
11. A DBMS uses multiple programs to provide software support for and control over the use of a database.
12. Appending data to a file is one of the least frequent activities performed on a database.
13. Information can be removed from a field, but the entire record will be deleted.
14. Sorting organizes records within a file in a specific order or sequence.
15. Querying or inquiring finds a particular item of information.
16. Selecting data copies all or part of a record in a file into a working file, leaving the existing file undisturbed.
17. Entering data is accomplished one file at a time, using an input form.
18. After entering data, all databases allow the user to change the screen input form.
19. A logical operator states the condition on which a record is to be retrieved.
20. All fields must be included on the output form.

Multiple Choice

Delete: 1-3, 6-8, 11, 20-23

Add:

13. The relational operator _____ means greater than.
    A. = C. >
    B. ≤ D <

14. The relational operator _____ means less than.
    A. = C. >
    B. ≤ D <

15. The relational operator _____ means greater than or equal to.
A. =
B. >
C. ≥
D. ≤

16. The relational operator _____ means less than or equal to.
A. =
B. >
C. ≥
D. ≤

17. Which of the following is NOT an element of a database?
A. Cell
B. Field
C. File
D. Record

18. Which of the following is a piece of information in a record, such as name, phone, etc.?
A. Cell
B. Field
C. File
D. Record

19. Which of the following is a group of fields for one individual?
A. Cell
B. Field
C. File
D. Record

20. Which of the following is a group of records with some element in common?
A. Cell
B. Field
C. File
D. Record

21. Which of the following is a reason for using a database?
A. Integrity of data is increased.
B. Repetitive work is increased.
C. Accuracy is decreased.
D. Efficiency is decreased.

22. Which of the following is an advantage of using information management?
A. Privacy can be compromised.
B. Centralized location of data allows better security.
C. Errors can be perpetuated.
D. Only one user can access a file (for change) at one time.

23. Which of the following is a disadvantage of using information management?
A. Updating of a record is only done once.
B. All occurrences of a record can be deleted at one time.
C. Multiple users can work with the database from different locations.
D. The owner of the data can lose control over it.

24. Which of the following allows the user to key data into a file through entries to a format or screen display?
A. Adding
B. Deleting
C. Sorting
D. Updating

25. Which of the following allows the user to alter records?
A. Adding
B. Deleting
C. Sorting
D. Updating

26. Which of the following allows the user to remove obsolete records?
A. Adding
B. Deleting
C. Sorting
D. Updating

27. Which of the following allows the user to organize records within a file in a specific order or sequence?
A. Adding
B. Deleting
C. Sorting
D. Updating

28. Which of the following allows the user to create an index that will locate records with a file?
A. Adding
B. Querying
C. Searching
D. Selecting

29. Which of the following allows the user to find a particular item of information?
A. Adding
C. Searching
B. Querying
D. Selecting

30. Which of the following allows the user to copy all or part of a record in a file into a working file, leaving the existing file undisturbed?
A. Adding
C. Searching
B. Querying
D. Selecting

Matching

Delete: 3. Plex 7. Hierarchical

Add:

9. Truncate: To cut-off or drop an existing portion of data that does not fit.

10. Criteria: The rules used for selecting records from the database.

Fill in the Blank

Delete: 2-4, 6-9

Add:

____________________ 3. A _____ expression states the condition on which a record is to be retrieved.

____________________ 4. A _____ expression deals with complex retrievals and the operators AND, OR, and NOT.

____________________ 5. A _____ of data means that you need to get a particular piece of data.

____________________ 6. The design of the _____ form or screen determines what data can be entered into a field.

____________________ 7. Output forms are used for _____.

____________________ 8. _____ applications include inventory control, lease management, and cash management.

____________________ 9. _____ applications include property management, mobile park management, and property listings.

____________________ 10. _____ applications include estimating, job costing, bid management, and project management.

Essays

Delete: 2

Add:

2. List and discuss three capabilities of a database.

ANSWERS

True and False

4. F
5. F
6. T
7. F
8. T
9. T
10. F
11. T
12. F
13. F
14. T
15. T
16. T
17. F
18. F
19. F
20. F

Multiple Choice

13. C
14. D
15. C
16. D
17. A
18. B
19. D
20. C
21. A
22. B
23. D
24. A
25. D
26. B
27. C
28. C
29. B
20. D

Fill in the Blank

3. Relational
4. Logical
5. Query
6. Input
7. Reports
8. Financial
9. Real estate
10. Construction

Essays

2. Any of the following may be used. Discussion evaluated to the satisfaction of the instructor.
   1. Adding or entering new records
   2. Updating or editing an existing record
   3. Deleting records
   4. Sorting or arranging records
   5. Searching or indexing records
   6. Querying or inquiring
   7. Selecting data

Section 3, Unit 2—Information Management Procedures

True and False

Delete: 6, 7, 9

Add:

10. The digits 0 to 9 can be found in text and numeric fields.

11. When defining the structure of the data, each file name, data type, and the number of characters to be included in each field should be identified.

12. When using test data only valid data should be used to decide whether the system is working properly.

13. Source documents are the only type of information needed to design a database.

14. The data for each record should be entered field by field.

15. A list is a form that is designed to print data from an individual record.

Multiple Choice

Delete: 4-8, 11, 13-19

Add:

8. Data items like 25.86, 1989, and 5 are the only item types found in _____ fields.
   A. Date
   B. Numeric
   C. Special
   D. Text

9. Data items like 12/25/89 and 2/14/90 are found in _____ fields.
   A. Date
   B. Numeric
   C. Special
   D. Text

10. Data items like # and % are found in _____ fields.
   A. Date
   B. Numeric
   C. Special
   D. Text

11. Which of the following steps in planning the organization of the database requires the preparation of a list of desired results?
   A. Define the problem.
   B. Define the structure of the data.
   C. Describe the flow of information.
   D. Describe the input.

12. Which of the following steps in planning the organization of the database requires a simple illustration of the work flow?
   A. Define the problem.
   B. Define the structure of the data.
   C. Describe the flow of information.
   D. Describe the input.

13. Which of the following steps in planning the organization of the database requires and identification of each file name, data type, and the number of characters to be included in each field?
   A. Define the problem.
   B. Define the structure of the data.
   C. Describe the flow of information.
   D. Describe the input.

14. Which of the following steps in planning the organization of the database requires studying the data in the source documents to decide upon how the form will look?
- A. Describe the flow of information.
- B. Describe the input.
- C. Describe the process.
- D. Describe the output.

15. Which of the following steps in planning the organization of the database requires a listing of the processes that will occur to a file or an input record?
- A. Describe the flow of information.
- B. Describe the input.
- C. Describe the process.
- D. Describe the output.

15. Which of the following steps in planning the organization of the database requires developing several formats for the information presentation?
- A. Describe the flow of information.
- B. Describe the input.
- C. Describe the process.
- D. Describe the output.

16. Which of the following is used to make it easier to enter data if the related fields follow one another on the form?
- A. Logical groupings
- B. Prompts
- C. Software capabilities
- D. Spacing

17. Which of the following is used to balance the screen so that the information does not look cluttered?
- A. Logical groupings
- B. Prompts
- C. Software capabilities
- D. Spacing

18. Which of the following is used to briefly and clearly state what data is expected next?
- A. Logical groupings
- B. Prompts
- C. Software capabilities
- D. Spacing

19. Which of the following controls what options are available to the designer?
- A. Logical groupings
- B. Prompts
- C. Software capabilities
- D. Spacing

20. Which of the following is NOT a command used for reporting information?
- A. REPORT
- B. DOCUMENT
- C. LIST
- D. PRINT

Fill in the Blank

Delete: 5-10

Add:

____________________ 5. A _____ field holds the characters A to Z.

____________________ 6. A _____ field is used to hold formal dates.

____________________ 7. A _____ field holds values.

____________________ 8. The character @ can be found in a _____ field.

____________________ 9. A _____ field can hold 1,2000.00 as an item.

____________________ 10. A _____ is also called a page format, and this form consists of headings at the top of the page followed by a print line for each record.

Essays

Delete: 1

Add:

1. Briefly discuss field formatting.

ANSWERS

True and False

10. T
11. T
12. F
13. F
14. T
15. F

Multiple Choice

8. B
9. A
10. D
11. A
12. C
13. B
14. B
15. C
16. D
17. D
18. B
19. C
20. B

Fill in the Blank

5. Text
6. Date
7. Numeric
8. Text
9. Text
10. List

Essays

1. Evaluated to the satisfaction of the instructor, but the essays should include data types and the structure of characteristics of the data must be defined.

Section 3

Test Bank Matrix

Section		Question Types				
Unit	Comp.	T/F	MC	Match	Fill-in	Essay
1	1	1,2	3-6	1-10	1-5	
	2	3-11	1,2,7-20		6	1,2
	3	12-20	21-30		7-10	
	4					
2	1	1-15	1-19	1-10	1-9	2
	2					1
	3		20		10	

Section 4, Unit 1—Introduction to Spreadsheets

True and False

Delete: 5, 6, 8, 11, 14, 16, 18, 19, 21

Add:

17. Labels are formed by entering numbers.

18. A range is a group of adjacent cells or a single cell.

19. Either numbers or cell references are used with operators to create a formula.

20. Quitting or clearing the worksheet returns the user to the operating system.

Multiple Choice

Delete: 2, 3, 7, 9, 13, 16, 22, 25, 29, 30, 39, 40

Add:

29. The mode used to insert or delete characters is called the:
    A. Enter mode
    B. Exit mode
    C. Edit mode
    D. Print mode

30. The sign used for exponents is:
    A. ^
    B. +
    C. X
    D. /

31. If the first character you type is a number, the program will assume you are entering:
    A. Values
    B. Text
    C. Labels
    D. Commas

32. Which of the following spreadsheet features is coded commands that can be stored in any unused portion of the spreadsheet to avoid tedious repetition?
    A. Automatic spillover
    B. Macros
    C. Passwords
    D. Windows

33. Which of the following spreadsheet features is valuable for including titles and text data without being constrained by the width of a cell?
    A. Automatic spillover
    B. Macros
    C. Passwords
    D. Windows

34. Which of the following spreadsheet features can help prevent unauthorized access to the data?
    A. Automatic spillover
    B. Macros
    C. Passwords
    D. Windows

35. Which of the following spreadsheet features allows the user to split the screen so each section displays a different part of the worksheet?
    A. Automatic spillover
    B. Macros
    C. Passwords
    D. Windows

Matching

Delete: 3. Bar graph 5. Bricklin 13. Graphics 15. Global command 17. Highlighting

Fill in the Blank

Delete: 2, 4, 5, 12, 16

ANSWERS

True and False

17. F
18. T
19. T
20. T

Multiple Choice

29. C
30. A
31. A
32. B
33. A
34. C
35. D

Section 4, Unit 2—Spreadsheet Procedures

True and False

Delete: 1-4, 18, 22, 24, 25

Add:

18. Borders identify the point at which columns and rows meet.

19. Lookup tables will check for a specified value on a row or column of the table and select a corresponding value.

20. A template cannot be saved without data.

Multiple Choice

Delete: 7, 9, 14-16, 20, 21, 27-30, 33, 39, 40

Add:

27. Displaying spreadsheet data values as a bar graph, line graph or pie chart is called:
    A. Graphics
    B. Paging
    C. Format
    D. Cell

28. A graph on which data are represented by plotting points and joining them is called a:
    A. Bar graph
    B. Pie chart
    C. Line graph
    D. Stacked-bar graph

29. A chart that illustrates relationships of parts to a whole and value is represented as a percentage of the pie or circle is called:
    A. Bar graph
    B. Pie chart
    C. Line graph
    D. Multiline graph

30. A graph that plots the size of values using bars instead of circles or pies is called a:
    A. Multiline graph
    B. Bar graph
    C. Stacked-bar graph
    D. Pie chart

31. A graph that has values stacked on top of each other as opposed to side-by-side is called:
    A. Stacked-bar graph
    B. Bar graph
    C. Line graph
    D. Pie chart

32. Which of the following is NOT a formatting option?
    A. Comma
    B. Labels
    C. Macro
    D. Percentage

33. Which of the following is NOT a built-in function?
    A. Logical
    B. Trigonometric
    C. Mathematical
    D. Statistical

34. Which of the following steps in designing a spreadsheet requires consideration of the amount and size of the data?
    A. Decide what results are needed
    B. Creating the template
    C. Designing the report
    D. Saving a copy

35. Which of the following is NOT a reason for making changes in a spreadsheet?
- A. Conditions may change that would affect the data within a spreadsheet.
- B. So that the template can be saved.
- C. The actual data values may need to be changed.
- D. What if analysis may be performed.

Matching

Delete: 3. PV 12. NPV 13. PMT 18. FV

Fill in the Blank

Delete: 1, 3, 9, 16-18, 20

Add:

__________ 14. A _____ chart is used to display data in wedge pieces.

__________ 15. _____ allow you to compare statistics visually.

__________ 16. _____ are used to plot values using bars.

__________ 17. The _____ mode is used to correct or change data that has previously been entered.

__________ 18. It is usually wise to save the spreadsheet onto a _____ before making changes.

__________ 19. If the first character entered is a letter, most programs assume a _____ is being entered.

__________ 20. If the first character entered is a number, most programs assume a _____ is being entered.

ANSWERS

True and False

18. F
19. T
20. F

Multiple Choice

27. A
28. C
29. B
30. B
31. A
32. C
33. A
34. C
35. B

Fill in the Blank

14. Pie
15. Graphs
16. Bar graphs
17. Edit
18. Disk
19. Label
20. Value

Section 4

Test Bank Matrix

Section		Question Types				
Unit	Comp.	T/F	MC	Match	Fill-in	Essay
1	1	1,2,4,5,7	2-6,8-12,17-22,24,26,27,29	1-20	3,9,12	1
	2	6,10,15	7,14,15		1,11	
	3	9,16-20	1,13,23,30,31		2,5,10,13	1,2
	4	3,8,11-14	16,25,28,32-35		4,6,7,8,14,15	
2	1	1-5,7,9-17	1,3,5-8, 11-13,15-17, 20,22,24,26		1,17,18	
	2	6,18-20	21,32-35	1-16	2-8, 10-12, 19,20	1
	3	8	2,4,9,10,14,18,19,23,25,27-31		9,13-16	2

Section 5, Unit 1—Telecommunications

True and False

Delete: 5, 9, 12, 15

Add:

12. Voice mail is best suited for long messages.

13. When using voice mail, messages cannot be saved.

14. The price of FAX machines has made them attractive to small businesses and individual users.

15. FAX machines generally have the same basic steps for operation: dialing the number, listening for the tone, and starting the transmission.

Multiple Choice

Delete: 9, 10

Add:

14. Which of the following is a significant advance in voice messaging?
    A. The cost of the processors and other hardware has increased.
    B. Information storage cost has decreased.
    C. It takes more memory to store lesser amounts of digitized voice.
    D. Voice messaging software is still being developed.

15. Which of the following is NOT a hardware requirement for voice messaging?
    A. Businesses with five to ten telephones need at least a PC XT (20MG hard disk) with a voice data board.
    B. A dedicated minicomputer is necessary for more powerful voice mail systems.
    C. Integration with Centrex or PBX will allow the caller to leave personal messages.
    D. A dedicated laser printer must be available at all times.

16. Which of the following features of voice mail allows the user to make changes to sections of a message?
    A. Edit
    B. Reply
    C. Save
    D. Security

17. Which of the following features of voice mail allows the user to retain a message in memory for future action or for replay?
    A. Edit
    B. Reply
    C. Save
    D. Security

18. Which of the following features of voice mail allows the user to answer another user on the system?
    A. Edit
    B. Reply
    C. Save
    D. Security

19. Which of the following features of voice mail allows the user to create a password that will prevents unauthorized access?
    A. Edit
    B. Reply
    C. Save
    D. Security

20. Which of the following features of voice mail allows a message to be spoken once and then sent to the mailboxes of a number of system users?
A. Broadcast
B. Redirect
C. Scan
D. Tracking

21. Which of the following features of voice mail allows the system to record information such as number of messages sent, originators, and recipients?
A. Broadcast
B. Redirect
C. Scan
D. Tracking

22. Which of the following features of voice mail allows messages to be screened before listening to the entire message?
A. Broadcast
B. Redirect
C. Scan
D. Tracking

23. Which of the following voice mail features allows a message to be rerouted to other voice mail system users?
A. Broadcast
B. Redirect
C. Scan
D. Tracking

24. Which of the following is NOT a part of a FAX machine?
A. Copier
B. Printer
C. Scanner
D. Spreadsheet

25. Which of the following is NOT generally a standard feature of a FAX machine?
A. Automatic redial
B. Broadcasting
C. Speed signaling
D. Polling

Fill in the Blank

Delete: 5, 7

Add:

____________________ 9. A _____ is considered a specialized form of electronic mail service.

____________________ 10. A FAX machine scans a page in _____.

Essays

Add:

3. Discuss the importance and future of telecommunications.

ANSWERS

True and False

12. F
13. F
14. T
15. T

Multiple Choice

14. B
15. D
16. A
17. C
18. B
19. D
20. A
21. D
22. C
23. B
24. D
25. C

Fill in the Blank

9. BBS
10. Lines

Essays

3. Evaluated to the satisfaction of the instructor. The following can be used as a guideline.

   Planners and forecasters believe we have just scratched the surface in the use of telecommunications. More hobbyists and personal computer users are discovering the convenience and fun of bulletin boards and the wealth of information at their fingertips through information services. Communication services are not yet an indispensable part of most lives. Many forecasters predict that we will soon pay our bills by phone, check our computers for messages wherever we go, and receive most of our education at home in front of a computer.

Section 5, Unit 2—Networking
(Originally Section 5, Unit 4)

True and False

Delete: 1, 3, 4

Add:

8. LANs are generally used in offices.
9. With a local area network, workers in each office in a building must access all files as needed by going to the main computer room.
10. In large networks information sent from a terminal must be coded through the multiplexer and the modem before entering the channel.

Multiple Choice

Delete: 3, 4, 6, 8

Add:

7. Which of the following network configurations has clusters of personal computers that are situated around a central network server?
   A. Ring
   B. Star
   C. Tree (bus)
   D. Vertical

8. Which of the following network configurations connects components in a single, closed loop in which information moves clockwise?
   A. Ring
   B. Star
   C. Tree (bus)
   D. Vertical

9. Which of the following network configurations is a single bidirectional communication link in which information moves sequentially?
   A. Ring
   B. Star
   C. Tree (bus)
   D. Vertical

10. Which of the following common components is a computer used like an electronic file cabinet?
    A. Channel
    B. File server
    C. Network hardware
    D. Software

11. Which of the following common components has a circuit board that provides the interface to establish the communication link?
    A. Channel
    B. File server
    C. Network hardware
    D. Software

12. Which of the following common components usually joins the stations together?
    A. Channel
    B. File server
    C. Network hardware
    D. Software

13. Which of the following common components is written specifically to coordinate the network hardware with the operating systems of the computers for ease and convenience of the users?
   - A. Channel
   - B. File server
   - C. Network hardware
   - D. Software

14. Which of the following is a TRUE statement about setting up a network?
   - A. Anyone can set up a network.
   - B. Most large systems require custom installation to meet the needs of the organization.
   - C. Technical understanding of the hardware and software is needed.
   - D. Installation instructions come with all network packages even when more than four computers are involved.

15. Which of the following is a disadvantage of using a network?
   - A. Data files can be accessed and shared.
   - B. Messages from others on the network can be sent and received.
   - C. Backup computers are available when needed.
   - D. When the file server is down, the whole network is down.

Matching

Delete: 7. Hierarchical network

Fill in the Blank

Delete: 2, 10

Add:

______________________ 9. A _____ ring is a type of ring network in which messages need not pass to adjacent stations.

______________________ 10. The front end processor is a computer connected to a _____ for the purpose of controlling data input and output.

Essays

Add:

3. Discuss the three major network configurations.

ANSWERS

True and False

8. T
9. F
10. T

Multiple Choice

7. B
8. A
9. C
10. B
11. C
12. A
13. D
14. B
15. D

Fill in the Blank

9. Token ring 10 Mainframe

Essays

3. Evaluated to the satisfaction of the instructor. The following can be used as a guideline.
   1) Star network has clusters of personal computers in a star shape around a central network server. The terminals work from one main computer and can communicate with each other.
   2) Ring network connects components in a single, closed loop in which information moves clockwise. If one terminal is down, all terminals are down.
   3) Tree (bus) network is a single bidirectional communication link in which information moves sequentially. All terminals can send and receive information.

Section 5, Unit 3—Graphic Layout and Design
(New Unit)

True and False

1. When planning a design, distribution is NOT considered a guideline.
2. Brochures announce an event or a series of items such as plays at a particular theater, a concert series, or even the details of a specific vacation or city.
3. Pleasing balance and emphasis help grab the reader's attention.
4. Devices called graphic elements work against the text to create visually cluttered documents.
5. Typography is the art and technique of working with type elements.
6. White space is distracting and should never be used.
7. Widows and orphans should be controlled so that the text remains together.
8. A lot of words convey messages better than graphics.
9. Captions or cutlines should accompany most graphics to explain the information shown.
10. Scanning can be helpful because original pictures or graphics are hard to produce.

Multiple Choice

1. Which of the following planning guidelines answers the question, "What action do you want the reader to take?"
   A. Character
   B. Content
   C. Form
   D. Purpose
2. Which of the following planning guidelines answers the question, "What information is to be communicated?"
   A. Character
   B. Content
   C. Form
   D. Purpose
3. Which of the following planning guidelines answers the question, "What mood is to be created?"
   A. Character
   B. Content
   C. Form
   D. Purpose
4. Which of the following planning guidelines answers the question, "How will the message be displayed?"
   A. Character
   B. Content
   C. Form
   D. Purpose
5. Which of the following planning guidelines answers the question, "Who will see the message?"
   A. Audience
   B. Budget
   C. Distribution
   D. Form
6. Which of the following planning guidelines answers the question, "Where will the message be seen?"
   A. Audience
   B. Budget
   C. Distribution
   D. Form
7. Which of the following planning guidelines answers the question, "How much money can be spent for the project, including printing and distribution costs?"
   A. Audience
   B. Budget
   C. Distribution
   D. Form

8. Which of the following is used in business to translate complex information into easy-to-understand charts and graphs?

A.	Brochure	C.	On-page flyer
B.	Newsletter	D.	Presentation graphic

9. Which of the following is used to convey one message in just a few words and are designed for mass distribution?

A.	Brochure	C.	On-page flyer
B.	Newsletter	D.	Presentation graphic

10. Which of the following are used to announce an event or a series of items?

A.	Brochure	C.	On-page flyer
B.	Newsletter	D.	Presentation graphic

11. Which of the following contains multi-columns and information vital to an organization, company, or group?

A.	Brochure	C.	On-page flyer
B.	Newsletter	D.	Presentation graphic

12. Which of the following graphic elements are sets of characters for one size and style of type?

A.	Fonts	C.	Leading
B.	Kerning	D.	Widows and orphans

13. Which of the following graphic elements is the distance between lines of type, measured in points from the baseline of one line of type to the baseline of the next line?

A.	Fonts	C.	Leading
B.	Kerning	D.	Widows and orphans

14. Which of the following graphic elements is the process of reducing white space between certain combinations of type characters to tighten fit and improve appearance?

A.	Fonts	C.	Leading
B.	Kerning	D.	Widows and orphans

15. Which of the following graphic elements should be controlled so the text remains together?

A.	Fonts	C.	Leading
B.	Kerning	D.	Widows and orphans

16. Which of the following graphic elements can be used to create dramatic effects?

A.	Captions	C.	Headlines
B.	Headers and footers	D.	White space

17. Which of the following graphic elements can be used for page numbers and for noting what the page includes?

A.	Captions	C.	Headlines
B.	Headers and footers	D.	White space

18. Which of the following graphic elements should stand out, but not conflict with the other items on the page?

A.	Captions	C.	Headlines
B.	Headers and footers	D.	White space

19. Which of the following graphic elements should accompany most graphics to explain the information shown?

A.	Captions	C.	Headlines
B.	Headers and footers	D.	White space

20. Which of the following is a small ornamental character used to decorate a page or create emphasis of a specific item?

A.	Clip art	C.	Line-based art
B.	Dingbat	D.	Halftone

21. Which of the following is the photomechanical reproduction of a black-and-white photograph into a series of fine dots for reproduction?
A. Clip art
B. Dingbat
C. Line-based art
D. Halftone

22. Which of the following steps in laying out a page is quickly drawn illustrations of how the design will appear on the page?
A. Designate columns
B. Rough layouts
C. Set margins
D. Sketch proposed layouts

23. Which of the following steps in laying out a page is used in brochures and plays a major role in how the layout will look?
A. Designate columns
B. Rough layouts
C. Set margins
D. Sketch proposed layouts

24. Which of the following steps in laying out a page is critical in deciding how the document will look and if the document will be folded or stapled?
A. Designate columns
B. Rough layouts
C. Set margins
D. Sketch proposed layouts

25. Which of the following steps in laying out a page is developed from the thumbnail sketches?
A. Designate columns
B. Rough layouts
C. Set margins
D. Sketch proposed layouts

Matching

A. Ascender
B. Balance
C. Base line
D. Comprehensive layout
E. Descender
F. Emphasis
G. Font
H. Kerning
I. Layout
J. Leading
K. Pica
L. Point
M. Rough draft
N. Serif
O. Spacing
P. Thumbnail sketch
Q. Tone

1. The part of a letter below the base line.

2. A light line or stroke extending from the main stroke in a letter.

3. Relating the style of type to the message.

4. Arranging text and graphics on a page in a pleasing way.

5. The process of reducing white space between certain combinations of type characters to tighten fit and improve appearance.

6. Arrangement of elements on a page to attract the most attention to the most important element.

7. The beginning ideas of layouts done on a small scale to aid in selection of best arrangement.

8. Spacing between lines of type.

9. Arranging words or letters at proper intervals.

10. The way text and graphics are placed on a page.

11. A set of characters with the same typeface, type size, and weight.

12. The part of a lowercase letter above the height of a lowercase x, such as the upper parts of h, d, or b.

13. 1/72 of an inch.

14. The line of writing on which the main part of the letters rests.

15. A layout drawn to actual size with the fine points not included.

Fill in the Blank

______________________ 1. One-page _____ convey one message in just a few words and are designed for mass distribution at a meeting, concert, or sporting event.

______________________ 2. The designer must capture the reader's _____ long enough to get the desired message across.

______________________ 3. _____ is the arrangement of elements on a page to attract the most attention to the most important element.

______________________ 4. _____ type has short lines extending from the ends of characters.

______________________ 5. _____ type has no lines extending from the end of characters.

______________________ 6. A _____ type is usually used for the body of a document because it is easier to read.

______________________ 7. A _____ type is generally used for heads and subheads.

______________________ 8. _____ art is a collection of professionally drawn symbols, letters, and pictures that can be used freely because it is in the public domain.

______________________ 9. _____ are used to enclose text or graphics.

______________________ 10. _____ art includes rules, boxes, and borders.

Essays

1. Discuss the guidelines used to plan a design.
2. Discuss the steps in laying out a page.

ANSWERS

True and False

1. F
2. T
3. T
4. F
5. T
6. F
7. T
8. F
9. T
10. T

Multiple Choice

1. D
2. B
3. A
4. C
5. A
6. C
7. B
8. D
9. C
10. A
11. B
12. A
13. C
14. B
15. D
16. D
17. B
18. C
19. A
20. B
21. D
22. D
23. A
24. C
25. B

Matching

1. E
2. N
3. Q
4. B
5. H
6. F
7. P
8. J
9. O
10. I
11. G
12. A
13. L
14. C
15. M

Fill in the Blank

1. Flyer
2. Attention
3. Emphasis
4. Serif
5. Sans serif
6. Serif
7. Sans serif
8. Clip
9. Boxes
10. Line-based

Essays

1. Evaluated to the satisfaction of the instructor. The following can be used as a guideline.
    1) Purpose
    2) Content
    3) Character
    4) Form
    5) Audience
    6) Distribution
    7) Budget
2. Evaluated to the satisfaction of the instructor. The following can be used as a guideline.
    1) Sketch proposed layouts.
    2) Designate number of columns to be used.
    3) Set margins.
    4) Rough layouts are developed from the thumbnail sketches.
    5) Comprehensive layouts are the completed design ready for printing.

Section 5, Unit 4—Desktop Publishing
(Originally Section 5, Unit 2)

True and False

Delete: 1, 3, 4, 8, 11, 12, 14

Add:

9. Desktop publishing is utilizing a personal computer, appropriate software, and an output device to combine text and graphics to produce a document.
10. Benefits of using desktop publishing include cost savings, convenience, and quality.
11. Performing electronic page layout is less efficient than the traditional method of cutting and pasting with knife and wax.
12. Entering and editing text is generally done in the desktop publishing program and should not be done in the word processing program.
13. Scanned images can be imported into a desktop publishing program.
14. When desktop publishing, a near-letter quality printer is better to use than a laser printer.
15. Desktop publishing can be done using some word processing programs.

Multiple Choice

Delete: 2, 6, 7

Add:

10. Which of the following is a FALSE statement about the process of text creation?
    A. Kerning and leading can be set.
    B. Only two types of type sizes and styles can be used.
    C. Indices and tables of contents can be created.
    D. Formatting the document includes setting margins, line spacing, tabs, etc.
11. Which of the following is a FALSE statement about the process of layout?
    A. Text and graphics can be merged in the layout.
    B. Multiple columns can be formatted.
    C. The copy can be adjusted to fit on a single page.
    D. Material can be printed vertically only.
12. Which of the following is a FALSE statement about the process of graphic image manipulation?
    A. Graphics can be expanded only.
    B. Scanned images can be imported.
    C. Images can be edited and altered.
    D. Images from paint and draw programs can be imported.
13. Which of the following is NOT a hardware requirement for desktop publishing?
    A. Laser printer
    B. Mouse
    C. Two floppy drives and no hard drive
    D. A high resolution monitor

14. Which of the following is used to save repetitious work?
    A. Graphics
    B. Margins
    C. Pagination
    D. Style sheets

15. Which of the following can be retrieved from the disk and placed on the screen page with the desktop publishing program controlling placement, size, dimensions, and cropping?
    A. Graphics
    B. Margins
    C. Pagination
    D. Style sheets

Matching

Delete: 1,4,5,6,13,14,22,23

Essays

Delete: 1

Add:

1. Discuss the benefits of desktop publishing.

ANSWERS

True and False

9. T
10. T
11. F
12. F
13. T
14. F
15. T

Multiple Choice

10. B
11. D
12. A
13. C
14. D
15. A

Essays

1. Evaluated to the satisfaction of the instructor; however, the following should be included:
    1. Cost savings
    2. Control
    3. Speed
    4. Convenience and quality
    5. Security and autonomy

Section 5

Test Bank Matrix

Section		Question Types				
Unit	**Comp.**	**T/F**	**MC**	**Match**	**Fill-in**	**Essay**
1	1	3,11	1,2,9-13	1-20	1-4	
	2	1,2,4,5,8-10, 12-15	3-7, 14-25		6,9,10	1,3
	3	6,7	8		5,7,8	2
2	1	1,7	2,4,5	1-14	2,3,5,9,10	1
	2	2,6	1,6-9		7,8	3
	3	8-10	3,10-13		4	
	4	3-5	14,15		1,6	2
3	1			1-15		
	2	1-10	1-25		1-7	1
	3				8-10	2
4	1	8	4,6-9	1-13		
	2	1,2,5,6,9,10	1-3		2-6,8	2
	3	7,11-13	5,10-12		1,9,10	1
	4	3,4,14,15	13-15		7	

Section 6, Unit 1—Integration Applications
(Originally Integrated Software)

True and False

Delete: 2, 3, 7-9

Add:

6. Integrated software refers to packaged programs that allow users to change from one application to another without returning to the operating system.
7. Word processors in the integrated software program are more sophisticated than a stand-alone program.
8. Stand-alone software programs cannot be integrated with other stand-alone programs.
9. WYSIWIG features are becoming important in spreadsheets, word processing, and the *Windows* environment.
10. One point to consider when comparing integrated software packages is the method of integration.

Multiple Choice

Delete: 2-4, 9, 10

Add:

6. Which of the following is an example of a single integrated program?
   A. *dBase III*
   B. *Lotus Works*
   C. *PageMaker*
   D. *Paradox*
7. Which of the following points of comparison between integrated software packages notes limitations related to memory size?
   A. Capacity of spreadsheet and database programs
   B. Data limitations
   C. Method of integration
   D. Operating speed
8. Which of the following points of comparison between integrated software packages notes differences in the number of rows and columns permitted?
   A. Capacity of spreadsheet and database programs
   B. Data limitations
   C. Method of integration
   D. Operating speed
9. Which of the following points of comparison between integrated software packages notes the time required by the program to carry out a number of frequently called for routines?
   A. Capacity of spreadsheet and database program
   B. Data limitations
   C. Method of integration
   D. Operating speed
10. Which of the following points of comparison between integrated software packages use menus, but they can be single line menus, or full screen?
    A. Capacity of spreadsheet and database programs
    B. Data limitations
    C. Method of integration
    D. Operating speed

Matching

Delete: 7. Copy protection

Add:

10. WYSIWIG: Allows the user to see what the information will look like.

Fill in the Blank

Delete: 1, 2, 4, 5, 8-10

Add:

______________ 4. Word processing is the _____ of integrating applications.

______________ 5. Inclusion or exclusion of software components is the _____ obvious difference between products.

______________ 6. Desktop tools are _____ that let the user do simple calculations, write informal notes, or lookup a phone number without exiting the program.

______________ 7. Most _____ integrated software is single program integration.

______________ 8. _____ modules permit data, from the database or spreadsheet portions, for example, to be sent to another computer, or data from another computer to be captured.

______________ 9. _____ and charts can be imported into a word processing program.

______________ 10. By _____ the data from the spreadsheet and importing the data into the word processing program, accuracy and productivity are increased.

Essays

Delete: 1

Add:

2. Discuss three points of comparison between integrated software packages.

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ANSWERS

True and False

6. T
7. F
8. F
9. T
10 T

Multiple Choice

6. B
7. A
8. B
9. D
10. C

Fill in the Blank

4. Foundation
5. Most
6. Routines
7. Lower-level
8. Communication
9. Graphs
10. Exporting

Essays

2. Evaluated to the satisfaction of the instructor. Any three of the following may be used.
    1. Inclusion or exclusion of software components
    2. Capacity of spreadsheet and database program
    3. Data limitations
    4. Operating speed
    5. Method of integration

Section 6

Test Bank Matrix

Section		Question Types				
Unit	Comp.	T/F	MC	Match	Fill-in	Essay
1	1	1-10	1-10	1-10	1-10	1,2
	2					

APPENDIX E

Course Descriptions

Microcomputer Applications* **11673100**
Grades 10-12, ½-1 unit

A cluster course which introduces basic concepts and provides hands-on skills related to microcomputer systems and applications. Special emphasis is placed on basic skills for the following: word processing, database, spreadsheet, telecommunications, desktop publishing, electronic image transfer, networking, integrated software, and social implications of using computers. This course is designed as a foundation course and provides preparation for advancement into the occupationally specific courses.

Office Support Systems **11673000**
Grades 10-12, ½-1 unit

A cluster course which introduces the basic concepts and skills needed for general office positions. Instruction and skill development are provided in keyboarding, filing, financial activities, office machines, and securing and maintaining employment. This course provides entry-level employment skills for the office or for advancement into an occupationally specific course.

Business Financial Applications **11673200**
Grades 10-12, ½-1 unit

A cluster course which introduces the basic concepts and skills necessary for employment in financial institutions. Special emphasis will be placed on banking operations, credit administration, types of loans, legal aspects of banking, and other financial institutions. This course provides entry-level information for working in a financial institution or for advancement into an occupationally specific course.

Business Information Processing* **11672100** **(2+2)**
Grades 11-12, 1-3 units (each year the course is taught)
Preemployment Laboratory or Cooperative Education

An occupationally specific course which introduces the concepts and skills for producing business documents and correspondence through the use of the document cycle and word processing equipment. Special emphasis is placed on automated management of business records, database management, and electronic spreadsheets. Management of information flow, electronic mail, desktop publishing, electronic bulletin boards, graphics, and on-line information services are also included. The course provides preparation for employment or advanced standing at the postsecondary level.

Office Administrative Systems **11672000** **(2+2)**
Grades 11-12, 1-3 units
Preemployment Laboratory or Cooperative Education

An occupationally specific course which includes advanced concepts and skills necessary for a general office position through a simulated office environment. Special emphasis is placed on keyboarding, records management, communications, operation of office machines, and the electronic production of business documents. The course prepares the student for office employment or advanced standing at the postsecondary level.

Business Computer Applications I* 1167220 (2+2)

Grades 11-12, 1-3 units ((each year the course is taught)
Preemployment Laboratory or Cooperative Education

An occupationally specific course which introduces the advanced concepts and skills related to computer applications. special emphasis is placed on basic computer operations, word processing, database management, spreadsheet manipulation, telecommunciations, desktop publishing, and other high-level business application software. This course is designed to provide the foundation for more advanced computer applications designated in Business Computer Applications II or advanced standing at the postsecondary level.

Business Computer Applications II* 11672300

Grades 11-12, 1-3 units
Preemployment Laboratory or Cooperative Education

An occupationally specific course which includes advanced concepts and skills related to advanced computer applications. special emphasis is placed on teleprocessing, integrated software systems, computer-generated graphics, algorithmic approaches to problem solving, and introductory programming skills. This course provides preparation for employment in a business computer occupation or advanced standing at the postsecondary level.

Business Computer Programming I* 11672400 (2+2)

Grades 11-12, 1-3 units
Preemployment Laboratory or Cooperative Education

An occupationally specific course which emphasizes concepts and skills related to business computer programming. Special emphasis is placed on programming concepts and languages, programming concepts and languages, programming methodology, skills related to data storage, and an awareness of programming applications for business. This course is designed to lay a foundation for further occupationally specific business programming instruction or advanced standing at the postsecondary level.

Business Computer Programming II* 11672500

Grades 11-12, 1-3 units
Preemployment Laboratory or Cooperative Education

An occupationally specific course which includes advanced concepts and skills related to business computer programming. special emphasis is placed on bringing development efforts to full production status in environments, and on languages commonly used in development of commercial software for business applications. Concepts such as design, maintenance, testing, team development, and user documentation are included. This course prepares students for employment in a computer related occupation or advanced placement at the postsecondary level.

Business Office Services**, CVAE—12670500, VEH—13670500

Grades 9-12, 1-3 units, CVAE
Grades 7-12, 1-3 units, VEH

A course which introduces basic concepts and skills needed for a general office position with concentration on the use of reprographic equipment, keyboarding, filing, and office machines. Special emphasis is placed on remediation in the areas of basic math and English usage, as well as securing and maintaining employment.

Business Office Clerical**, CVAE—12670600, VEH—13670400

Grades 9-12, 1-3 units, CVAE
Grades 7-12, 1-3 units, VEH

A course which introduces basic concepts and skills for a general office position with concentration on the use of keyboarding, filing, office machines, communications, and reprographics. Special emphasis is placed on remediation in the areas of basic math and English usage, as well as securing and maintaining employment.

* Recommended for approval to satisfy the computer science requirement for the advanced high school program.

** Students may enroll each year the course is offered

Speciality Courses

The following specialty courses may be offered:

Current Title	Proposed Titles	
Legal Secretarial	Legal Administrative Systems	11670130
Medical Secretarial	Medical Administrative Systems	11670129
Banking Secretarial	Banking and Financial Systems	11670135
Insurance		11670108
Educational Assistant		11671300

APPENDIX F
Essential Elements

COMMON ESSENTIAL ELEMENTS

75.87 Office Education

(a) **The elements in this subsection are common to office education programs and shall be included in each course at the appropriate level. They are described here to preclude repetition in each course. Every school offering office education shall provide courses which include the following essential elements:**

(1) Leadership concepts and skills. The student shall be provided opportunities to:

(A) demonstrate skills, characteristics, and responsibilities of leaders and effective group members;

(B) demonstrate a knowledge of parliamentary procedure principles;

(C) plan and conduct leadership activities; and

(D) prepare for effective citizenship and for participation in our democratic society.

(2) Concepts and skills related to successful employment and/or postsecondary training. The student shall be provided opportunities to:

(A) identify employment opportunities and preparation requirements in the chosen field;

(B) identify effective methods to secure and terminate employment;

(C) demonstrate effective communication skills both oral and written, and follow through on assigned tasks;

(D) demonstrate dependability and punctuality;

(E) demonstrate productive work habits and attitudes;

(F) understand the importance of taking pride in the quality of work performed;

(G) recognize the dignity in work;

(H) develop skills in planning and organizing work;

(I) apply required methods and sequences when performing tasks;

(J) apply principles of time management and work simplification when performing assigned tasks;

(K) identify ethical practices and responsibilities; and

(L) understand the importance of the application of organizational policies and procedures.

(3) Concepts and skills associated with entrepreneurship. The student shall be provided opportunities to:

(A) identify opportunities for business ownership;

(B) understand the risk and profit motive factor;

(C) understand the elements and advantages of the free enterprise system; and

(D) explain the role of small business in the free enterprise system.

(4) Concepts and skills related to safety and safe working conditions. The student shall be provided opportunities to identify and apply safe working practices to all training situations.

(5) Concepts and skills associated with human relations and personality development. The student shall be provided opportunities to:

(A) understand the importance of maintaining good health and proper appearance for effective job performance;

(B) understand oneself and others;

(C) exercise self-control;

(D) accept and use criticism;

(E) recognize basic human relationships as they relate to business success; and

(F) demonstrate characteristics for successful working relationships.

(6) Concepts and skills related to personal and business management. The student shall be provided opportunities to:

(A) explain how management assists in reaching personal and family goals;

(B) explain the management process;

(C) describe the role of management in controlling stress;

(D) identify and understand personal checking accounts;

(E) identify and understand personal loan application processes;

(F) identify and understand different financial institutions;

(G) identify the role and functions of business management;

(H) understand the lines of authority; and

(I) identify effective supervisory techniques.

OFFICE ADMINISTRATIVE SYSTEMS

75.87

(b) Office Administrative Systems (1, 2, or 3 units) shall include the following essential elements:

(1) Concepts and skills related to office administration. The student shall be provided opportunities to:

(A) identify duties and responsibilities common to most offices;

(B) delineate the workflow of an office or system;

(C) relate office operations to the entire business organization;

(D) establish priorities and develop organizational abilities;

(E) interpret and apply information from resource materials; and

(F) identify and apply concepts and skills related to safety and safe working conditions in the office environment.

(2) Concepts and skills related to successful employment and/or postsecondary training. The student shall be provided opportunities to:

(A) identify employment opportunities and preparation requirements in the chosen field; and

(B) identify effective methods to secure, maintain, and terminate employment.

(3) Concepts and skills necessary for effective communications in the office environment. The student shall be provided opportunities to:

(A) identify proper techniques in business telephone usage;

(B) prepare effective communication using the document production cycle;

(C) identify and use proper oral and written language skills relating to business;

(D) identify current terminology relating to business and technology; and

(E) identify classes of mail, special mailing services, and procedures of handling incoming and outgoing mail.

(4) Concepts and skills related to information management and control. The student shall be provided opportunities to:

(A) identify equipment and supplies necessary for a filing system;

(B) identify correct usage in applying terminology and procedures for indexing, coding, and filing using the alphabetic, numeric, subject, and geographic system;

(C) identify, describe, and/or demonstrate procedures for controlling manual records and computerized information; and

(D) identify a transfer and retention schedule.

(5) Concepts and skills necessary for the operation of office equipment. The student shall be provided opportunities to:

(A) use the touch system to produce accurate mailable business documents using electronic equipment;

(B) demonstrate the ability to enter and retrieve data using a computer;

(C) use the touch system on the electronic calculator/computer to compute business problems;

(D) identify appropriate reprographic processes for specific tasks; and

(E) demonstrate ability to produce legible copies.

(6) Concepts and skills associated with the social implications of computers. The student shall be provided opportunities to:

(A) examine issues concerning responsible use of computer systems; and

(B) understand the social ramifications of computer applications related to privacy, values, and reliability of systems.

OFFICE ADMINISTRATIVE SYSTEMS II

State Board Approval Pending

75.87

Office Administrative Systems II (1, 2, or 3 units) shall include the following essential elements:

(1) Advanced concepts and skill simulation related to office administration. The student shall be provided opportunities to:

- *(A) perform duties and responsibilities common to most offices;*
- *(B) establish the workflow of an office or system;*
- *(C) relate office operations to the entire business organization;*
- *(D) establish priorities and develop organizational abilities; and*
- *(E) interpret data, make decisions, and apply information from resource materials.*

(2) Advanced concepts and skills necessary for effective communications in the office environment. The student shall be provided opportunities to:

- *(A) apply proper techniques in business telephone usage;*
- *(B) identify the use of teleprocessing systems for data exchange in an actual business setting;*
- *(C) compose and produce effective communication using the document production cycle;*
- *(D) use proper oral and written language skills relating to business; and*
- *(E) identify current terminology relating to business and technology.*

(3) Advanced concepts and skills related to information management and control. The student shall be provided opportunities to:

- *(A) demonstrate procedures for organizing and filing materials;*
- *(B) identify correct usage in applying terminology and procedures for indexing, coding, and filing using the alphabetic, numeric, subject, and geographic system; and*
- *(C) demonstrate procedures for accessing and maintaining computerized information.*

(4) Advanced concepts and skills simulation for the operation of office equipment. The student shall be provided opportunities to:

- *(A) demonstrate keyboarding speed and accuracy necessary for entry-level employment;*
- *(B) produce mailable business documents using microcomputers;*
- *(C) demonstrate the ability to enter and retrieve data using a computer;*
- *(D) use the touch system on the electronic calculator/computer to compute business problems; and*
- *(E) utilize appropriate reprographic processes for specific tasks, including desktop publishing.*

BUSINESS INFORMATION PROCESSING

Changes Made to Essential Elements State Board Approval Pending

Business Information Processing I (one, two, or three units) shall include the following essential elements:

(1) Concepts and skills related to effective communication and production of business documents. The student shall be provided opportunities to:

- *(A) demonstrate proficiency in business English, spelling, and proofreading;*
- *(B) Identify and apply correct format for business correspondence and documents and mail merge;*
- *(C) demonstrate word processing procedures to steps in document production;*
- *(D) demonstrate proficiency in transcription; and*
- *(E) use proper techniques in business telephone usage.*

(2) Concepts and skills related to business information management. The student shall be provided opportunities to:

- *(A) identify procedures for controlling manual records by applying terminology and procedures for indexing, coding, and filing alphabetically;*
- *(B) demonstrate procedures for automated management of business records, including use of database management software for storage, retrieval, manipulation, selection, and reporting of records; and*
- *(C) identify business applications of electronic spreadsheets and demonstrate fundamental concepts and operational procedures related to their use.*

(3) Concepts and skills related to management of information flow out of, into, and within an office. The student shall be provided opportunities to:

- *(A) demonstrate computer-aided preparation and distribution of personalized correspondence, using electronic mail;*
- *(B) identify tools for preparing information for mass distribution and demonstrate desktop publishing and presentation graphic techniques;*

(C) Apply the concepts of using communication systems both for accessing and using on-line information services, for transmission of outgoing information, and utilization of electronic bulletin boards; and

(D) demonstrate transportation of electronic images.

(4) Identify characteristics of contemporary office systems related to information processing and management. The student shall be given opportunities to:

(A) identify and/or observe office activity related to information processing and information management;

(B) identify responsibilities and procedures involved in business information processing with individuals working in the field;

(C) read and discuss current literature related to business information processing; and

(D) identify emerging information processing tools and understand their impact on business information processing.

(5) Concepts and skills associated with the social implications of computers. The student shall be provided opportunities to:

(A) examine issues concerning responsible use of computer systems;

(B) understand the social ramifications of computer applications related to privacy, values, and reliability of systems.

Note: These variations were made with the approval of the State Director of Office Education in order to meet the computer requirements of some colleges and universities in the State.

Appendix F

Essential Elements

BUSINESS INFORMATION PROCESSING II

State Board Approval Pending

75.87

Business Information Processing II (1, 2, or 3 units) shall include the following elements:

(1) Concepts and skills related to effective communication and production of business documents. The students shall be provided opportunities to:

- *(A) demonstrate proficiency in business English, spelling, proofreading in production of original business documents, and/or editing work previously created;*
- *(B) produce documents through the use of text manipulation and/or high-level integrated software; and*
- *(C) compose, dictate, and transcribe business documents.*

(2) Concepts and skills related to business information management. The students shall be provided opportunities to apply decision making skills:

- *(A) using advanced procedures and applications for automated management of business information using a database management system.*
- *(B) using advanced applications of electronic spreadsheets.*

(3) Concepts and skills related to management of information flow out of, into, and within an office. The students shall be provided opportunities to:

- *(A) integrate word processing, database, and spreadsheet software using import/export commands and/or ASCII files;*
- *(B) understand the process for setup installation and use of software by reading documentation prepared by the software manufacturer;*
- *(C) identify and apply concepts of layout and design in desktop publishing, including graphics, fonts, and paper for final copy;*
- *(D) demonstrate proficiency in the use of presentation graphics to aid in presentation of an oral report;*
- *(E) identify criteria for selection and evaluation of software; and*
- *(F) apply concepts related to transmitting information electronically.*

BUSINESS OFFICE SERVICES

75.87

(d) Coordinated Vocational Academic Education (CVAE) Business Office Services (1-2 units) shall include the following essential elements:

(1) Concepts and skills involved in keyboarding. The student shall be provided opportunities to:

(A) demonstrate the skills involved in keyboarding;

(B) apply appropriate procedures for proofreading and correcting errors; and

(C) demonstrate and identify information processing concepts in keyboarding.

(2) Concepts and skills necessary for filing. The student shall be provided opportunities to:

(A) demonstrate procedures used in alphabetic and numeric filing; and

(B) identify procedures used in electronic filing.

(3) Concepts and skills related to the operation of office equipment. The student shall be provided opportunities to:

(A) identify the procedures and equipment used in completing layouts for reprographics;

(B) identify the procedures used in operating reprographic equipment;

(C) demonstrate the ability to prepare masters and to operate the offset press;

(D) demonstrate the ability to use desktop publishing features;

(E) demonstrate the ability to solve mathematical problems using the touch method on the electronic calculator/computer keypad; and

(F) demonstrate the ability to enter and retrieve data on a microcomputer.

(4) Concepts and skills necessary for processing mail. The student shall be provided opportunities to:

(A) identify the procedures involved in processing incoming and outgoing mail; and

(B) identify the procedures involved in transmitting mail electronically.

(5) Concepts and skills necessary for effective communications. The student shall be provided opportunities to:

  (A) develop effective listening skills;

  (B) identify and use proper business techniques when using the telephone;

  (C) prepare effective written communications; and

  (D) identify and use proper language usage skills in business.

(6) Concepts and skills necessary for securing and maintaining employment. The student shall be provided opportunities to:

  (A) demonstrate the skills necessary for job application and interview; and

  (B) apply human relations skills and the ability to work with others.

(7) Concepts and skills associated with the social implications of computers. The student shall be provided opportunities to:

  (A) examine issues concerning responsible use of computer systems;

  (B) understand the social ramifications of computer applications related to privacy, values, and reliability of systems.

BUSINESS COMPUTER APPLICATIONS I

Blended Course

75.87

(e) **Business Computer Applications I (1, 2, or 3 units) shall include the following essential elements:**

(1) Concepts and skills related to computer operations. The student shall be provided opportunities to:

(A) demonstrate comprehension of computer-related vocabulary;

(B) describe the functions of the components of a computer system;

(C) demonstrate and apply the capabilities of an operating system; and

(D) explore the concepts of telecommunication techniques and networking.

(2) Concepts and skills related to word processing. The student shall be provided opportunities to:

(A) demonstrate word processing concepts;

(B) apply higher-level capabilities of word processing tools and software; and

(C) understand the procedures and recognize the importance of merging data processing and word processing.

(3) Concepts and skills related to spreadsheets. The student shall be provided opportunities to:

(A) demonstrate higher-level spreadsheet concepts; and

(B) apply higher-level capabilities of spreadsheets.

(4) concepts and skills related to database management. The student shall be provided opportunities to:

(A) demonstrate database concepts, procedures, and capabilities; and

(B) apply higher-level capabilities of database management.

(5) Concepts and skills related to advanced application software. The student shall be provided opportunities to:

- (A) discuss integration of people and computers for productivity;
- (B) demonstrate the ability to apply information processing concepts and skills to realistic business situations;
- (C) demonstrate the ability to apply information processing concepts and skills to realistic personal situations; and
- (D) identify tools for preparing information for mass distribution including desktop publishing, graphics, and maintenance of electronic bulletin boards.

(6) Concepts and skills associated with the social implications of computers. The student shall be provided opportunities to

- (A) examine issues concerning responsible use of computer systems; and
- (B) understand the social ramifications of computer applications related to privacy, values, and reliability of systems.

BUSINESS COMPUTER APPLICATIONS II

75.87

(f) **Business Computer Applications II (1, 2, or 3 units) shall include the following essential elements:**

(1) Concepts and skills related to teleprocessing. The student shall be provided opportunities to:

(A) describe the basic components of a teleprocessing system;

(B) demonstrate an understanding of network organization; and

(C) understand and identify the use of a teleprocessing system for data exchange in an actual business setting.

(2) Concepts and skills related to integrated systems. The student shall be provided opportunities to:

(A) understand and identify the advantages, capabilities, and functions of integrated software systems;

(B) manipulate data through the use of an integrated system; and

(C) use integrated systems to merge data from different applications.

(3) Concepts and skills related to graphics. The student shall be provided opportunities to:

(A) analyze and interpret business graphs and charts; and

(B) demonstrate graphic representation of data.

(4) Concepts and skills related to algorithmic approaches to problem solving. The student shall be provided opportunities to:

(A) demonstrate the ability to solve problems using appropriate analytical techniques; and

(B) demonstrate an awareness of the phases related to systems analysis and design.

(5) Concepts and skills related to applying logic to programming. The student shall be provided opportunities to:

(A) apply the appropriate analytical techniques in solving programming problems;

(B) translate the applied solution into a common programming or macro language; and

(C) demonstrate the ability to debug and audit a solution.

BUSINESS COMPUTER PROGRAMMING I

Blended Course

75.87

(g) **Business Computer Programming I (1, 2, or 3 units) shall include the following essential elements:**

(1) Concepts and skills related to computer data processing. The student shall be provided opportunities to:

(A) demonstrate comprehension of computer-related terminology; and

(B) identify the major components of computer systems.

(2) Concepts and skills related to hardware utilization. The student shall be provided opportunities to:

(A) review computer hardware operations;

(B) understand categorization of hardware according to size, application, and configurations;

(C) reinforce the ability to use basic operating systems; and

(D) review the proper care of hardware and software.

(3) Concepts and skills associated with algorithmic approaches to problem solving. The student shall be provided opportunities to:

(A) demonstrate the skills related to structured approaches to problem solving; and

(B) translate problems into logical steps using appropriate program design techniques.

(4) Concepts and skills associated with commands and statements of a programming language. The student shall be provided opportunities to:

(A) identify and use variables, constants, and literals;

(B) demonstrate the use of input and output statements;

(C) demonstrate and use conditional and unconditional branching statements;

(D) demonstrate and use looping techniques; and

(E) develop and use subroutines for modular programming.

(5) Concepts and skills related to program execution, testing, debugging, and documentation. The student shall be provided opportunities to:

- (A) demonstrate the ability to execute computer programs with sample data;
- (B) distinguish between syntax and logic errors;
- (C) apply standard debugging procedures; and
- (D) develop internal and external program documentation including record layout and report spacing charts.

(6) Concepts and skills associated with data storage. The student shall be provided opportunities to:

- (A) demonstrate an understanding of the types of media for data storage;
- (B) identify methods of storing data on storage devices; and
- (C) create and maintain a program to store and retrieve data from a file.

(7) Concepts and skills associated with the social implications of computers. The student shall be provided opportunities to:

- (A) examine issues concerning responsible use of computer systems; and
- (B) understand the social ramifications of computer applications related to privacy, values, and reliability of systems.

BUSINESS COMPUTER PROGRAMMING II

75.87

(h) Business Computer Programming II (1, 2, or 3 units) shall include the following essential elements:

(1) Concepts and skills related to application system development. The student shall be provided opportunities to:

(A) demonstrate a comprehension of the system development;

(B) demonstrate a comprehension of the implementation process; and

(D) develop user documentation.

(2) Concepts and skills related to structured programming application. The student shall be provided opportunities to:

(A) develop an understanding of structured programming;

(B) identify the concepts of random and sequential files;

(C) translate solutions into major structural elements of a program;

(D) translate solutions into language statements for input, processing, and output; and

(E) develop ability to use an advanced operating system computer.

(3) Concepts and skills related to program testing. The student shall be provided opportunities to:

(A) develop test data and testing techniques;

(B) apply test data to programs run on the computer; and

(C) demonstrate the ability to debug and audit programs.

(4) Concepts and skills associated with software implementation and maintenance. The student shall be provided opportunities to:

(A) write documentation for maintaining a system;

(B) understand the process of implementing a system into production status; and

(C) develop an understanding of the programmer responsibilities in program maintenance.

OFFICE SUPPORT SYSTEMS

75.87

(i) Office Support Systems (1/2 or 1 unit) shall include the following essential elements:

(1) Concepts and skills involved in keyboarding. The student shall be provided opportunities to:

(A) demonstrate the skill of keyboarding letters, memos, forms, and reports;

(B) apply appropriate procedures for proofreading and correcting errors; and

(C) demonstrate and identify information processing concepts in keyboarding.

(2) Concepts and skills necessary for filing. The student shall be provided opportunities to:

(A) demonstrate procedures used in alphabetic, numeric, subject, and geographic filing; and

(B) identify procedures used in electronic filing.

(3) Concepts and skills necessary for financial activities. The student shall be provided opportunities to:

(A) demonstrate the ability to maintain a checking account; and

(B) demonstrate the procedures involved in preparing a payroll and preparing tax reports.

(4) Concepts and skills necessary for processing mail. The student shall be provided opportunities to:

(A) identify the procedures involved in processing incoming and outgoing mail; and

(B) identify the procedures involved in transmitting mail electronically.

(5) Concepts and skills necessary for effective communications. The student shall be provided opportunities to:

(A) identify and use proper business techniques when using the telephone;

(B) prepare effective written communications; and

(C) identify and use proper language usage skills in business.

(6) Concepts and skills necessary for effective understanding of business operations. The student shall be provided opportunities to:

  - (A) describe the role of business in the enterprise system; and
  - (B) identify the general responsibilities of employees.

(7) Concepts and skills necessary for securing and maintaining employment. The student shall be provided opportunities to:

  - (A) demonstrate the skills necessary for job application and interview; and
  - (B) apply human relations skills and the ability to work with others.

MICROCOMPUTER APPLICATIONS

75.87

(j) Microcomputer Applications (1/2 or 1 unit) shall include the following essential elements:

(1) Fundamental concepts and operational skills related to microcomputer systems. The student shall be provided opportunities to:

(A) understand the background and uses for computer systems;

(B) demonstrate competency in touch keyboarding, including technique, speed, and accuracy;

(C) understand the components of computer systems, including hardware, operating environments, and application software; and

(D) demonstrate competency in microcomputer systems operation.

(2) Concepts and skills necessary for microcomputer-based document production, formatting, and proofreading, at least including use of word processing software and automated spellchecking software. The student shall be provided opportunities to:

(A) identify and use the terminology related to word processing;

(B) demonstrate the operational procedures used in document production and page layout; and

(C) employ appropriate steps in producing documents.

(3) Concepts and skills necessary for use of microcomputer-based storage, retrieval, manipulation, and reporting information, at least including use of database management software. The student shall be provided opportunities to:

(A) identify and use the terminology related to information management;

(B) demonstrate the operational procedures and techniques used in information management software;

(C) use microcomputer software to design databases, enter and manipulate information, and produce reports (including graphic display of summary reports); and

(D) conduct keyword database searches using logic operations such as AND, OR, and NOT.

(4) Concepts and skills necessary for use of microcomputer-based computation, analysis, planning, and reporting with numeric data, at least including use of electronic spreadsheets. The student shall be provided opportunities to:

   (A) identify and use the terminology related to electronic manipulation of numeric data;

   (B) demonstrate operational procedures and techniques used with microcomputer software for processing numeric data;

   (C) use microcomputer software for computation, analysis, planning, and reporting (including graphic display) with numeric data; and

   (D) apply electronic spreadsheet software both through use of prepared templates and with student-designed problem solutions.

(5) Concepts and skills related to emerging microcomputer-based information processing tools. The student shall be provided opportunities to:

   (A) understand the concept of exchanging information via telecommunication software, at least including electronic mail, remote bulletin board access, and access of on-line information services;

   (B) understand and use features of integrated software packages to share data among applications;

   (C) understand concepts and identify characteristics and uses associated with tools for desktop publishing and generation of presentation graphics;

   (D) understand concepts related to transporting of textual and nontextual data both locally and remotely, at least including transporting of text and facsimile images electronically, and physical transfer of ultra-high-density storage media; and

   (E) understand concepts related to networked and multi-user configurations.

(6) Concepts associated with the social implications of computers. The student shall be provided opportunities to:

   (A) examine issues concerning responsible use of computer systems;

   (B) understand the social ramifications of computer applications related to privacy, values, and reliability of systems; and

   (C) understand the impact of computing on leisure and household management.

BUSINESS FINANCIAL APPLICATIONS

75.87

(k) Business Financial Applications (1/2 or 1 unit) shall include the following essential elements:

(1) Concepts and skills related to banking operations. The student shall be provided opportunities to:

(A) identify and understand checking accounts;

(B) understand fundamentals of teller operations; and

(C) identify and understand bookkeeping systems.

(2) Concepts and skills related to credit administration. The student shall be provided opportunities to:

(A) understand methods of credit investigation; and

(B) understand concepts related to the use of credit analysis.

(3) Concepts and skills related to loans. The student shall be provided opportunities to:

(A) identify types of loans and purposes; and

(B) demonstrate and understand calculation of interest and payoff.

(4) Concepts and skills related to legal aspects of banking. The student shall be provided opportunities to:

(A) understand customer and consumer services; and

(B) understand regulations of financial intermediaries.

(5) Concepts and skills related to other financial institutions. The student shall be provided opportunities to:

(A) understand and explore savings and loan operations; and

(B) understand and explore credit union operations.

Appendix F

Essential Elements

MEDICAL ADMINISTRATIVE SYSTEMS

Course Title and Essential Elements Pending State Board Approval

75.87

(1.1) Medical Administrative Systems (1,2, or 3 units) shall include the following essential *elements:*

(1) Concepts and skills related to administering a medical office. The student shall be provided opportunities to:

- *(A) perform duties and responsibilities common to most offices.*
- *(B) identify current terminology relating to the medical industry and to technology; and*
- *(C) identify social implications as related to the medical industry.*

(2) Concepts and skills necessary for use of word processing software and equipment and tools to produce microcomputer-based medical document production. The student shall be provided opportunities to:

- *(A) demonstrate keyboarding speed and accuracy necessary for entry-level employment;*
- *(B) apply proofreading techniques in addition to using automated spell-checking, thesaurus, and grammar checking software.*
- *(C) apply word processing skills using computer-based tools by employing appropriate steps for medical document production;*
- *(D) apply correct format for general and medical correspondence and documents; and*
- *(E) apply page layout techniques to desktop publishing documents.*

(3) Concepts and skills related to effective communication. The students shall be provided opportunities to:

- *(A) use proper oral and written language skills relating to the medical industry;*
- *(B) demonstrate proficiency in business English, spelling, and proofreading;*
- *(C) compose and prepare effective medical communications using the document production cycle;*

(D) *apply proper techniques in business telephone usage;*

(E) *recognize classes of mail, special mailing services, and procedures of handling incoming and outgoing mail;*

(4) *Concepts and skills related to information management and control of medical documents. The student shall be provided opportunities to:*

(A) *apply procedures of controlling manual records by applying terminology and procedures for indexing, coding, and filing alphabetically; and*

(B) *demonstrate procedures for controlling computerized information.*

(5) *Concepts and skills necessary for the operation of office equipment. The student shall be provided opportunities to:*

(A) *demonstrate proficiency in transcription;*

(B) *use the touch system on the electronic calculator/computer to compute business problems related to a medical office; and*

(C) *apply reprographic techniques; and*

(D) *transport images electronically.*

(6) *Concepts and skills related to processing of medical insurance. The student shall be provided opportunities to:*

(A) *demonstrate procedures used in processing government claims; and*

(B) *demonstrate procedures used in processing private carrier claims.*

(7) *Concepts and skills related to the daily accounting cycle. The student shall be provided opportunities to:*

(A) *demonstrate procedures used in operating a pegboard system; and*

(B) *demonstrate procedures used in a computerized medical office accounting system.*

LEGAL ADMINISTRATIVE SYSTEMS

Specialty Course—Course Title and Essential Elements Pending State Board Approval

75.87

(1.1) Legal Administrative Systems (1,2, or 3 units) shall include the following essential elements:

(1) *Concepts and skills related to administering a legal office. The student shall be provided opportunities to:*

   (A) *perform duties and responsibilities common to most offices.*
   Identify and understand and organizational chart.
   Explain data and information flows within a legal facility

   (B) *identify current terminology relating to the legal industry and to technology; and*
   Use and identify terminology related to the legal industry and to technology.

   (C) *identify social implications as related to the legal industry.*
   Identify the major issues and technological developments related to the legal industry and technology.
   Describe the ethical and legal issues that have arisen as a result of the computer revolution.
   Identify privacy issues involved with electronic data storage.

(2) *Concepts and skills related to effective communication. The students shall be provided opportunities to:*

   (A) *use proper oral and written language skills relating to business;*

   (B) *demonstrate proficiency in business English, spelling, and proofreading;*

   (C) *compose and prepare effective legal communications using the document production cycle;*

   (D) *apply proper techniques in business telephone usage;*

   (E) *recognize classes of mail, special mailing services, and procedures of handling incoming and outgoing mail;*

(3) Concepts and skills necessary for use of word processing software and equipment and tools to produce microcomputer-based legal document production. The student shall be provided opportunities to:

- *(A) demonstrate keyboarding speed and accuracy necessary for entry-level employment;*
- *(B) apply proofreading techniques in addition to using automated spellchecking, thesaurus, and grammar checking software.*
- *(C) apply word processing skills using computer-based tools by employing appropriate steps for legal document production;*
- *(D) apply correct format for general and legal correspondence and documents; and*
- *(E) apply page layout techniques to desktop publishing documents.*

(4) Concepts and skills related to information management and control of legal documents. The student shall be provided opportunities to:

- *(A) apply procedures of controlling manual records by applying terminology and procedures for indexing, coding, and filing alphabetically; and*
- *(B) demonstrate procedures for controlling computerized information.*

(5) Concepts and skills necessary for the operation of office equipment. The student shall be provided opportunities to:

- *(A) demonstrate proficiency in transcription;*
- *(B) use the touch system on the electronic calculator/computer to compute business problems related to a legal office; and*
- *(C) apply reprographic techniques; and*
- *(D) transport images electronically.*

INSURANCE ADMINISTRATIVE SYSTEMS

Specialty Course—State Board Approval Pending

75.87

(l.3) Insurance Administrative Systems (1, 2, or 3 units) shall include the following essential elements:

(1) *Concepts and skills related to general insurance. The student shall be provided opportunities to:*

- (A) *understand and explain the origins of insurance;*
- (B) *identify the different types of losses that property owners are faced with and which are covered by insurance policies;*
- (C) *explain the different risks that are involved which warrant obtaining insurance;*
- (D) *differentiate between pure risks and speculative risks that may be encountered by the insured;*
- (E) *identify requirements of an insurable risk and the items which may prevent obtaining insurance;*
- (F) *explain society's costs/benefits with insurance and the reasons in favor of purchasing insurance;*
- (G) *interpret insurance regulations as they pertain to policyholders;*
- (H) *identify the procedures required for obtaining financial solvency;*
- (I) *explain the activities of agents and the importance of agents to an agency;*
- (J) *analyze the methods used by agencies in pricing insurance policies;*
- (K) *assemble and prepare for submission insurance contracts;*
- (L) *explain how insurance can be justified as being a product;*
- (M) *identify and explain the different parts contained in an insurance policy;*
- (N) *compare and contrast the duties applicable to an agent to those of a broker;*
- (O) *diagram and explain the path of an insurance policy from the point of contact with the prospect to settlement of a claim; and*

(P) *simulate the myriad of activities performed by the members of an insurance agency.*

(2) *Concepts and skills related to automobile insurance. The student shall be provided opportunities to:*

  (A) *understand and apply insurance terminology correctly in written and oral communication;*

  (B) *explain the role of insurance concepts to society;*

  (C) *differentiate the sections contained in a personal automobile policy;*

  (D) *identify the information contained in an insuring agreement;*

  (E) *prepare quotations for coverages by use of the rating manual and computer;*

  (F) *explain the different coverages available and the advantages and disadvantages of each;*

  (G) *illustrate the effect of variables in preparing quotes, i.e., limits, classifications, territories, and symbols; and*

  (H) *prepare appropriate documents for insurance transactions.*

(3) *Concepts and skills related to homeowners insurance. The student shall be provided opportunities to:*

  (A) *explain the concept regarding eligibility for insurance coverage;*

  (B) *identify the information contained in the insuring agreement;*

  (C) *identify and understand personal checking accounts;*

  (D) *identify and understand personal loan application processes;*

  (E) *identify and understand different financial institutions;*

  (F) *identify the role and functions of business management;*

  (G) *understand the lines of authority; and*

  (H) *identify effective supervisory techniques.*

BANKING AND FINANCIAL SYSTEMS

Specialty Course—Course Title and Essential Elements Pending State Board Approval

75.87

(l.1) Banking and Financial Systems (1,2, or 3 units) shall include the following essential elements:

(1) Concepts and skills related to banking operations. The student shall be provided opportunities to:

(A) identify and understand checking accounts;

(B) understand fundamentals of teller operations; and

(C) identify and understand bookkeeping systems.

(2) Concepts and skills related to credit administration. The student shall be provided opportunities to:

(A) understand methods of credit investigation; and

(B) understand concepts related to the use of credit analysis.

(3) Concepts and skills related to loans. The student shall be provided opportunities to:

(A) identify types of loans and purposes; and

(B) understand regulations of financial intermediaries.

(4) Concepts and skills related to other financial institutions. The student shall be provided opportunities to:

(A) understand and explore savings and loan operations; and

(B) understand and explore credit union operations.

BUSINESS OFFICE CLERICAL

75.87

(m) Coordinated Vocational Academic Education (CVAE) Business Office Clerical (1-2 units) shall include the following essential elements:

(1) Concepts and skills involved in keyboarding. The student shall be provided opportunities to:

(A) demonstrate the skills involved in keyboarding;

(B) apply appropriate procedures for proofreading and correcting errors; and

(C) demonstrate and identify information processing concepts in keyboarding.

(2) Concepts and skills necessary for filing. The student shall be provided opportunities to:

(A) demonstrate procedures used in alphabetic and numeric filing; and

(B) identify procedures used in electronic filing.

(3) Concepts and skills related to the operation of office equipment. The student shall be provided opportunities to:

(A) identify the procedures and equipment used in completing layouts for reprographics;

(B) identify the procedures used in operating reprographic equipment;

(C) demonstrate the ability to use desktop publishing features;

(D) demonstrate the ability to solve mathematical problems using the touch method on the electronic calculator/computer keypad; and

(E) demonstrate the ability to enter and retrieve data on a microcomputer.

(4) Concepts and skills necessary for processing mail. The student shall be provided opportunities to:

(A) identify the procedures involved in processing incoming and outgoing mail; and

(B) identify the procedures involved in transmitting mail electronically.

(5) Concepts and skills necessary for effective communications. The student shall be provided opportunities to:

- (A) develop effective listening skills;
- (B) identify and use proper business techniques when using the telephone;
- (C) prepare effective written communications; and
- (D) identify and use proper language usage skills in business.

(6) Concepts and skills necessary for securing and maintaining employment. The student shall be provided opportunities to:

- (A) demonstrate the skills necessary for job application and interview; and
- (B) apply human relations skills and the ability to work with others.

(7) Concepts and skills associated with the social implications of computers. The student shall be provided opportunities to:

- (A) examine issues concerning responsible use of computer systems;
- (B) understand the social ramifications of computer applications related to privacy, values, and reliability of systems.

APPENDIX G

Lesson Plan Development

STEPS IN LESSON PLANNING

Because of the nature of the Microcomputer Applications course, individual lesson plans for each day have not been provided. It is expected that the sequence of units and production skills in this course will be taught in a variety of ways as schools and teachers meet local and student needs. The curriculum outlines at the beginning of each unit provide instructional information for preparing lesson plans.

The guide was developed with flexibility to allow for a variety of teaching methods. Units can be used out of sequence and most can be performed independently by students. A sample lesson format is included.

Divisions of the Lesson Plan

Good teaching is based on good planning, presentation, and discipline. The following components were designed to help the teacher in all three areas.

1. **Unit Title**—the unit title identifies the broad area of which the specific lesson is a part.
2. **Lesson Title**—the lesson title identifies a category of the unit for which instruction is delivered.
3. **Estimated Time**—the time frame clues the instructor in determining the scope of each lesson and helps with long-term planning and time management.
4. **Essential Elements**—identifying essential elements helps the instructor focus and plan for instruction.
5. **Domains**—effective lessons teach to the cognitive domain (knowledge or information), psychomotor domain (skills), and affective domain (values or attitudes). The effective instructor keeps these in mind when selecting the teaching materials, strategies, and tools for a particular lesson.
6. **Basic Skills**—all lessons call upon the students' basic skills in the areas of reading, writing, and math. Attention to integration of those skills with microcomputer applications on the part of the teacher lends to reinforcement and improvement of those skills on the part of the student.
7. **Student Competencies**—students are expected to acquire specific competencies. Competencies are identified for each lesson.
8. **Teacher Preparation**—the instructor decides on the material resources (equipment, supplies, and materials, such as charts, tables, books), needed for the lesson. Student materials should also be considered. Plans for field trips should be formalized.
9. **Teacher Presentation**—the effective instructor thinks about and plans his/her classroom presentations beforehand. Part of this process is selecting appropriate teaching strategies. Examples are demonstration, questioning, discussion, drill, and lecture. Strategies should be selected based (1) on the kind of lesson being taught and (2) on the learning needs of the students for whom the

instruction is intended. Presentation should proceed, step by step, simple to complex, with teaching points interspersed in the sequence.

10. **Student Activities**—practice is the keynote of successful teaching and learning in the field of vocational/technical education. Activities assigned to the students are the part of the lesson that makes use of this principle.

11. **Assignment**—the assignment part of the lesson is a continuation of the student activities. Assignments should provide meaningful application of the concept just learned as an aid to retention.

12. **Evaluation**—both the teacher and the student need some method of feedback for determining whether learning has taken place. The system for doing this is called evaluation. Evaluation in vocational-technical subjects should include a variety of methods.

    Norm-Referenced Testing—a form of educational measurement that ascertains an individual's performance in relation to the performance of other individuals on the same measuring device. Because the individual is compared with some normative group, such measures are described as norm-referenced. Standardized objective tests are norm referenced tests

    Criterion-Referenced Testing—a form of educational measurement that ascertains an individual's attainment of some criterion or performance standard. Some examples of how a criterion-referenced test item might be worked are:

    - Attached is a simple program. By the next class day, enter and run the program. The program must be debugged. A score of 100% is required.

    - Attached is a list of programming terminology. Define the terms. A score of 75% or higher is required. Maximum time is 40 minutes.

    Because the curriculum guide is based on performance-based instruction with specified student competencies, criterion-referenced testing is appropriate for measuring student performance.

    There are three essential steps to remember in implementing criterion-referenced measurement.

    1. Prior to instruction, prepare a set of instructional objectives for the unit.

    2. Select appropriate assessment approaches/techniques to assess students' mastery of the stated objectives. The appropriateness of the technique selected will largely be determined by the nature of the skill or competency specified in the objective.

    3. Match particular assessment techniques selected with the performance behaviors delineated in the instructional objectives. It is important that the specific test item correspond to the level and type of behavior specified in the objective. In other words, test on the same level that you teach.

    Other methods of evaluation —teacher observation of skill and/or attitude, production measures, and accuracy measures.

13. **Closure**—closure comes at the end of the lesson and ties everything together. With closure the instructor guides the students into seeing how the parts contribute to make the whole. Effective closure results in a feeling of understanding, accomplishment, and well being.

SAMPLE LESSON PLAN FORMAT

COURSE____________________INSTRUCTOR____________________

Unit Title ____

LESSON TITLE ____

Estimated Time________________________(Hours or Days)

Essential Element(s)____________________________________

Domain(s) _____Cognitive _____Psychomotor _____Affective

Basic Skill(s) _____Reading _____Writing _____Mathematics

Student Competency(ies)____________________________________

Teacher Preparation **Resources**

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Teacher Presentation

Teaching Strategies

Student Activities

Resources

Assignment(s)

Evaluation

Closure

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MAJOR CATEGORIES IN THE COGNITIVE DOMAIN

Evaluation

involves acts of decision making, judging, or selecting based on criteria and rationale **requires synthesis in order to evaluate**

Synthesis

combines elements to form new entity from original one **requires analysis in order to synthesize**

Analysis

separates whole into its parts, until relationship among elements is clear **requires ability to apply information in order to analyze**

Application

uses information in a situation different from original learning context **requires comprehension of information in order to apply in new situation**

Comprehension

interprets, translates, summarizes, or paraphrases given information **requires knowledge in order to demonstrate comprehension**

Knowledge

recognition and recall of facts and specifics

VERBS FOR STATING BEHAVIORAL OBJECTIVES

Cognitive Domain

1. **Knowledge**—remembering previously learned materials

Cite
Define
Identify
Label
List
Match
Name
Quote
Recite
Reproduce
Pronounce
State

2. **Comprehension**—ability to grasp the meaning of material

Alter
Change
Convert
Depict
Describe
Explain
Give examples
Illustrate
Interpret
Paraphrase
Portray
Rephrase
Represent
Restate
Reword
Simplify
Substitute
Summarize
Translate
Vary

3. **Application**—ability to use learned material in new and concrete situations

Apply
Compute
Demonstrate
Direct
Discover
Employ
Evidence
Manifest
Manage
Predict
Prepare
Present
Relate
Show
Solve
Utilize

4. **Analysis**—ability to break down material into its component parts so its organizational structure can be understood

Ascertain
Analyze
Associate
Designate
Determine
Diagnose
Diagram
Differentiate
Discriminate
Dissect
Distinguish
Divide
Examine
Find
Infer
Outline
Point out
Reduce
Separate

5. **Synthesis**—ability to put parts together to form a whole

Combine
Compile
Compose
Conceive
Create
Design
Develop
Devise
Expand
Extend
Generalize
Integrate
Invent
Modify
Originate
Plan
Pose
Propose
Project
Rearrange
Revise
Rewrite
Synthesize
Theorize
Write

6. **Evaluation**— ability to judge the value of material for a given purpose

Appraise
Assess
Compare
Conclude
Contrast
Criticize
Critique
Deduce
Evaluate
Judge
Weigh

MAJOR CATEGORIES IN THE PSYCHOMOTOR DOMAIN

Naturalization

completes one or more skills with ease and becomes automatic with limited physical or mental exertion

Articulation

combines more than one skill in sequence with harmony and consistency

Precision

reproduces a skill with accuracy, proportion, and exactness; usually performed independent of original source

Manipulation

performs skill according to instruction rather than observation

Imitation

observes skill and attempts to repeat it

VERBS FOR STATING BEHAVIORAL OBJECTIVES

Psychomotor Domain

1. **Perception**—becoming aware of the action to be performed through sensory stimulation

Detect
Examine
Feel
Handle
Hear
Hold
Note
Notice
Observe
Perceive
Recognize
See
Sense
Smell
Taste
Touch

2. **Set**—becoming ready to act mentally, physically, and emotionally

Adjust
Check
Confirm
Decide
Estimate
Familiarize
Locate
Place
Position
Ready
Regulate
Select
Set
Set up
Sit
Situate
Stand
Station

3. **Guided response**—performing the action under supervision through imitation or trial and error

Attempt
Carry out
Copy
Duplicate
Experiment
Follow
Imitate
Mimic
Practice
Repeat
Reproduce
Test
Try

4. **Mechanism**—performing the act habitually with some degree of confidence

Acquire
Assemble
Complete
Conduct
Construct
Do
Execute
Gain
Improve
Maintain
Make
Manipulate
Measure
Operate
Pace
Perform
Proceed
Produce
Progress
Use

5. **Complex overt response**—performing the act automatically with high level of skill

Achieve
Accomplish
Advance
Attain
Automatize
Exceed
Excel
Master
Perfect
Reach
Refine
Succeed
Surpass
Transcend

MAJOR CATEGORIES IN THE AFFECTIVE DOMAIN

Characterizing

total behavior is consistent with values internalized

Organizing

committed to set of values as displayed by behavior

Valuing

displays behavior consistent with single belief or attitude in situations where he/she is not forced to comply or obey

Responding

complies with given expectations by attending or reacting to stimuli or phenomena; i.e., interests

Receiving

aware of; passively attending to certain phenomena and stimuli; i.e., listening

VERBS FOR STATING BEHAVIORAL OBJECTIVES

Affective Domain

1. **Receiving**—attending and becoming aware of a situation, idea, or process through the sensory organs

Acknowledge
Attend
Be aware
Listen
Look
Pay attention
Receive
Show alertness
Tolerate
View
Watch

2. **Responding**—doing something about a situation, idea, or process

Agree (to)
Answer
Ask
Assist
Be willing
Communicate
Comply
Consent
Contribute
Cooperate
Discuss
Follow up
Indicate
Inquire
Obey
Participate
Pursue
Question
React
Read
Reply
Request
Respond
Seek
Visit
Volunteer

3. **Valuing**—developing attitudes by choosing, prizing, cherishing

Accept
Adopt
Approve
Choose
Commit
Desire
Display
Endorse
Exhibit
Express
Form
Initiate
Prefer
Sanction

4. **Organization**—arranging values in priority according to a system

Adapt
Arrange
Categorize
Classify
Establish
Formulate
Group
Order
Organize
Rank
Rate
Systemize

5. **Characterization**—choosing the same values consistently to form a philosophy of life

Act
Advocate
Be consistent
Behave
Characterize
Conform
Continue
Defend
Devote
Disclose
Encourage
Endure
Exemplify
Function
Habituate
Incorporate
Influence
Justify
Maintain
Pattern
Persist
Preserve
Recommend
Remain
Retain
Reveal
Serve
Support
Uphold
Urge
Verify

APPENDIX H
Special Needs

ADAPTING FOR SPECIAL NEEDS STUDENTS

The methods of instruction used in office education courses which make them unique make courses viable for students with special needs. Because a variety of learning styles are addressed in instructional delivery, modification is seldom necessary unless the student has a handicapping condition. The instructor should always seek advice and assistance from special education teachers, counselors, and school administrators if any student is having difficulty mastering the objectives of the course. Following are suggestions for adapting instructional methods and materials for special needs students. The suggestions are arranged alphabetically according to the specific handicapping condition.

Emotionally Disturbed

1. Seek the assistance of the school counselor and/or school psychologist in determining methods to cope with deviant student behavior.
2. Be warm and empathetic—trust is important in establishing any relationship, especially with these students.
3. Teach problem-solving skills.
4. Utilize operant conditioning—keeping a record of behavior is recommended to test the stability of a student's behavior.

Hearing Impaired

1. Always write directions on the board, or write them on assignment sheets.
2. If a student is skilled in lip reading, face him/her when speaking.
3. If audio methods are used to supplement instruction, write out important points covered in the audio presentation.
4. Seat the student in the front of the room.
5. Assign a hearing student to provide peer tutoring for the hearing-impaired student.

6. A mild to moderate hearing loss can hinder a student's ability to understand language concepts and structure. Remediation in language development should occur in the resource room, but be aware of this problem when developing grading procedures.

Learning Disabled

1. Plan specific instructional strategies when a student's type of learning disability has been determined.
2. Gear instructional methods to the sense or style through which the student learns best.
3. Divide lessons into their component subskills and teach in smaller units.

Mentally Retarded

1. Use unit approaches as an instructional strategy. If vocabulary and sentence structure are simplified, and if concrete illustrations and exercises are provided research suggests that mildly mentally retarded students can master relatively complex material.
2. Learning should be programmed in sequence and presented in such a way that the student will learn at a rate compatible with his/her development.
3. Proceed in a systematic way so basic knowledge precedes more difficult material.
4. Help the student experience success. Organize materials and use methods that lead him/her to the right answer.
5. Provide feedback. Let the student know when he/she responds correctly.
6. Provide for positive transfer of knowledge from one situation to another
7. Help the student discover general fundamental principles.
8. Provide repetition of learned experiences. Mentally retarded students require more repetitions of an experience to retain the information.
9. Avoid confusing the student. Associate a given stimulus or cue with only one response in the early stages of learning.
10. Limit the number of concepts presented in any one class period.

Visually Impaired

1. Use materials which are concrete. The student must be presented with concrete objects that he/she can touch and manipulate.

2. Unify experiences. Use sequencing and explain the sequencing.

3. Learn by doing. Foster self-motivation and activity for students. Objects do not attract blind children. Their ability to listen, relate, and remember must be developed to the fullest.

4. Use lamps and rheostat with variable intensities. By varying light intensities and positioning, lamps can provide the additional or dimmed illumination that a visually-impaired student might require.

5. Make use of large-type books provided by the Commission for the Blind.

6. Provide raised line paper (writing paper, graph paper, etc.) Raised line paper allows a student to write script "on the line" or to make a graph by placing markers or by punching holes onto the graph paper.

7. Provide cassette tape recorders. Students can use the recorder to take notes, listen to recorded texts, or complete assignments.

8. Use talking calculators. These hand-held calculators speak each entry and result. Earphones are available.

9. Allow more time. Students will frequently need extra time to complete assignments and examinations. Allowing time and a half is usually adequate.

TX 92CD05

MICROCOMPUTER APPLICATIONS
ADDENDUM

Jan Patton
Office Education
Curriculum Coordinator

Darlena Mahaffey
Office Education
Technical Writer

Published by
Educational Development and Training Center
East Texas State University
Commerce, Texas

in cooperation with
Texas Education Agency
Vocational Education Programs
Austin, Texas

BO-301-AD1

FIRST EDITION
1992

First printing 1992—500 copies

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East Texas State University

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To ensure education equity, this material
has been reviewed to eliminate
bias or stereotyping.

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Educational Development & Training Center
East Texas State University • Commerce, TX 75429
1-800-356-3382

Acknowledgments

Special gratitude and appreciation are extended to the following persons for their cooperation in planning, writing, reviewing, and evaluating the materials developed through this project.

Texas Education Agency
Robert K. Gordon, Office Education Program Director
Dorothy Baum, Office Education Program Specialist
David Childs, Office Education Program Specialist

Special credit is extended to the support staff of the Educational Development and Training Center for their continuous support and desire to work as a team.

Ludonna Jackson, Editor
Lynne Morris, Proofreader
Linda Baron, Word Processing Specialist
Bob Norsworthy and Aaron Pendland, Graphic Artists
Cindy Johnson, Student Worker

Office Education Products
from the Educational Development & Training Center

Test Builder Program	Format Catalog No. MS-DOS 3½—BOI-3203-TBP MS-DOS 5¼—BOI-3205-TBP MAC 3½—BOM-3202-TBP
Test Banks	For each course
Business Information Processing Simulations	BO-300-SIM
Microcomputer Applications Simulations	BO-301-SIM
Business Computer Applications Simulations	BO-302-SIM
Business Office Clerical/Business Office Services Simulations	BO-326-SIM
Office Administrative Systems Simulations	BO-306-SIM
Office Support Systems Simulations	BO-307-SIM
Office Education Quality Guide	BO-315-TG
Integrating Academic Principles into Office Education	Call for specific courses
Building Math Skills With Spreadsheets	JS-500-TG
Building Reading and Writing Skills Through Word Processing	JS-501-TG
Conquer the TAAS	LM-100-SM
Data Drill	MS-DOS 3½—JSI-3003-CS MS-DOS 5¼—JSI-3005-CS
Karl's 101 HandyHandouts	KD-100-HH
Mower Store	MS-DOS 3½—JSI-2003-CS MS-DOS 5¼—JSI-2005-CS APPLE 3½—JSA-2003-CS APPLE 5¼—JSA-2005-CS MAC 3½—JSM-2003-CS
Stop and Think Cards	Stop and Think Cards—GEN-100-STC Stop and Think Cards II—GEN-101-STC Stop and Think III—GEN-102-STC

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The reference section provides a listing and description of resources according to instructional areas to assist the instructor in selecting appropriate resources. Although the guide contains several products, it does not include all products available on the market. The absence of a product listing should by no means be considered as an indication of the product's inappropriateness or lack of quality. The descriptions used for each resource have been taken directly from catalogs and other promotional literature. The purpose of these descriptions is to aid the instructor in understanding the purpose of the product, its intended use and general price range.

These descriptions do not indicate an endorsement by the Educational Development and Training Center, East Texas State University, or the Texas Education Agency. Time limitations of this project did not afford opportunities to review products. Therefore, instructors are encouraged to secure copies of products on a preview basis before purchasing.

Microcomputer Applications

Computer Basics

Reference Books

Batch File and Macros Quick Reference
Que Development Group — Que
Features alphabetical command listings for fast learning and includes dozens of sample batch files and macros. $

Beginner's Guide to Printers
John G. Stephenson — Sams
Anyone interested in buying, maintaining, or operating computer printers—and improving their performance—needs this book. As a guide for the serious user this book demystifies laser printer type font basics, selection, and characteristics. $

Fastback Quick Reference
Que Development Group — Que
Instant reference to this high-performance file backup system. Explains commands and procedures for all users. $

Hard Disk Power with the Jamsa Utilities
Kris Jamsa — Sams
Teaches readers true fundamentals of hard disk organization and performance. Begins with an in-depth discussion on such topics as low-level formatting, controller types, and hard disk terms. Comes with the newly developed Jamsa Utilities to maximize hard disk performance and capability. $$

Hard Disk Quick Reference
Que Development Group — Que
Instant guide to the information necessary for top hard disk performance. Compact and easy to use. $

Introduction to Business Software
Que Development Group — Que
Ideal introduction to important business software! Covers the best-selling MS-DOS software programs and explains essentials of each application. $

Introduction to Personal Computers
Katherine Murray — Que
Perfect how-to text for beginning computer users! Features valuable survey of computer hardware and software and helps readers decide what purchases suit their needs. Also contains product comparisons, buyer's tips, and printer advice. $

MS-DOS PC Tutor
Que Development Group — Que
Includes excellent disk-based tutorial. Interactive exercises teach users how to load DOS, format disks, and manage files. $$

Key to Reference Cost	
$	0-25
$$	26-50
$$$	51-75
$$$$	76-125
$$$$$	126-199
$$$$$$	200+

MS-DOS 5 Quick Reference
Que Development Group — Que
Alphabetical listings make information easy to find and covers EDLIN and DOS message information. $

MS-DOS 5 QuickStart
Que Development Group — Que
The best combination of step-by-step instruction, examples, and graphics. Explores all new DOS features, functions, and commands. $

Norton Utilities Quick Reference
Que Development Group — Que
Compact, fast answers to essential Norton Utilities operations. Alphabetical listings make information easy to find. $

PC Concepts: A Core Text for the Software Solutions Series
Nelda Shelton — Houghton Mifflin
Can be used as the core text for the Software Solutions Series—or on its own as an introduction to microcomputers. Either way, it gives students an effective foundation in PC functions, operations, and applications, so they can rapidly learn the skills they need to compete in business today. $

PC Tools Quick Reference, 2nd Edition
Que Development Group — Que
Instant guide to the essential commands and functions of PC Tools Deluxe. Covers disk backup, security, and compression. $

Q&A Quick Reference
Que Development Group — Que
Instant guide to all essential commands of Q&A. Compact and easy-to-use, with alphabetical listings by task. $

Q&A QuickStart
Que Development Group — Que
The best combination of step-by-step instruction, examples, graphics, and user feedback available. Best information on the Q&A file, write, and report capabilities. $

Que's Computer User's Dictionary, 2nd Edition
Que Development Group — Que
Completely updated A-to-Z glossary of common computer terms! Over 200,000 already in print. Includes terms with tips and illustrations. A practical reference for home, school, or office. $

Que's MS-DOS 5 User's Guide, Special Edition
Que Development Group — Que
Easy-to-use comprehensive guide for experienced users. Fast-paced instruction with powerful text editing tricks and batch file techniques. $$

Que's PS/1 Book

Katherine Murray Que

This all-in-one guide covers IBM's PS/1 from A-to-Z! Combines step-by-step instructions and comprehensive reference material. Tips and techniques help user get most out of the PS/1. The best guide for home, family, and small business use. $

SmartWare Tips, Tricks, and Traps, 2nd Edition

Andrew N. Schwartz Que

Hundreds of tips and hints for all the integrated applications. Features timesaving techniques for Project Processing. $$

The Best Book of Microsoft Windows 3

Carl Townsend Sams

Offers users an in-depth tutorial and reference that covers the product features. Basic steps, tutorial exercises, practical examples, screen illustrations, and advanced techniques for power users are all presented in an easy-to-understand, easy-to-reference format. $

The Big Mac Book, 2nd Edition

Neil J. Salkind Que

Complete Vendor Guide includes on-line services. Product comparisons, troubleshooting tips, and networking advice. $$

The First Book of Fastback Plus

Jonathan Kamin Sams

A great introductory guide to desktop file management. Users learn how to protect, back up, and retrieve damaged files. Step-by-step instructions lead users through practical procedures for file security, virus prevention, and efficient management. $

The First Book of LaserJet Printers

Gordon McComb Sams

The ultimate introduction to all Hewlett-Packard LaserJet printers. As the perfect maintenance and operation reference, the book provides definitive details on how to get started quickly, trouble-shoot problems, and how to maximize LaserJet performance. $

The First Book of Microsoft Windows 3

Nimersheim and Townsend Sams

Complete tutorial and step-by-step instructions show readers how to navigate, customize, and manage Windows 3 and the applications included in the Windows 3 package. Also shows how to use other popular Windows programs and how to run standard DOS applications in the Windows environment. $

The First Book of MS-DOS 5

Jack Nimesheim Sams

Combines Quick Steps lessons with end-of-chapter questions and answers for effective instruction. Explains functions, commands, and how to install DOS. Plus, the text includes tips on file management and more advanced programming with the latest features of the new DOS version 5.0. $

The First Book of Norton Utilities

Joseph Wikert Sams

Each feature of the Norton Utilities is addressed here using a step-by-step approach to maximize user productivity. With two-color graphics and quick-reference tables, each chapter includes an overview and a Quick Steps section for specific tasks to make learning fast and easy. $

The First Book of PC Tools Deluxe: New Edition

Gordon McComb Sams

This is an excellent beginners guide to PC Tools Deluxe—the best selling DOS utility package. Step-by-step lessons take the reader through functions and fundamentals to maximize PC performance. $

The First Book of PC Tools Deluxe, 2nd Edition

Gordon McComb Sams

Covering through Version 6.0, the book focuses on the fundamentals of this popular DOS utilities package—and covers the new text retrieval, disk repair, backup, caching, and communications features. Includes business examples and Quick Steps tutorials. $

The First Book of Personal Computing

Wang and Kraynak Sams

A one-step guide to the purchase, operation, use, enjoyment, and maintenance of the personal computer. Provides a thorough discussion of software and hardware options and tells which products do what faster, cheaper, and easier. Includes a comprehensive glossary of computer terms. $

The First Book of PS/1

Kate Barnes Sams

Covers the software IBM has bundled in with the PS/1 and teaches users how to get the most from their hardware setup. The book explains Prodigy, Microsoft Works, Promenade, and how to begin programming with BASIC. $

The First Book of Windows: New Edition

Jack Nimersheim Sams

Completely updated to cover all the great features of this essential operating environment! Complete tutorial and simple instructions show readers how to navigate, customize, and manage Windows. Special information helps readers maximize the performance of Windows accessories. $

The Little Mac Book

Neil J. Salkind Que

Ideal companion to The Big Mac Book, 2nd Edition. Alphabetical topic listings make information easy to find. $

The Waite Group's Discovering MS-DOS

O'Day and The Waite Group Sams

Begins with a unique overview of operating systems. Explains commands and then shows how to use MS-DOS to produce letters and documents. Detailed instructions are included on how to create, name, and manipulate files. $

The Waite Group's Discovering MS-DOS, 2nd Edition

O'Day and Henderson Sams

Has been completely updated to cover the latest version of DOS. Beginning with an overview of operating systems, the book explains all DOS functions such as batch files and the DOS shell. Readers then learn how to create, name, and manipulate files, as well as sort and find data quickly. $

The Waite Group's Understanding MS-DOS, 2nd Edition

O'Day, Angermeyer, Henderson,
and The Waite Group Sams

Readers with little or no DOS experience will appreciate the easy-to-understand treatment of fundamentals such as formatting disks, copying and naming files, and organizing tree-structured directories. More advanced topics such as redirection, filtering, and using batch files are also discussed. $

Using Carbon Copy Plus

Walter Bruce Que

Demonstrates the basics of remotely sharing keyboards, disks, and programs. The only reference guide available on this remote communications software. $

Using Microsoft Windows 3, 2nd Edition

Person and Rose Que

Features numerous screen shots and illustrations and combines tutorials, examples, and reference material in the Que tradition. Also contains Windows Shopping Catalog and thorough troubleshooting guide. $

Using MS-DOS 5

Que Development Group Que

Easy-to-use guide for everyday users—mixes examples with productivity tips. Extras add value: Tips, hints, warnings, error messages, and command reference tables. Complete coverage of the DOS 5 shell. $

Using Norton Utilities

Alan C. Elliott Que

Troubleshooting tips for the most efficient security, data retrieval, and hard disk performance. Includes a glossary of disk recovery and disk management terms. $

Using OS/2

Halliday, Minasi, and Gobel Que

Features basic and expert coverage of the OS/2 Presentation Manager and efficient management methods for the OS/2 environment. $$

Using PC DOS, 3rd Edition

Chris DeVoney Que

Features hands-on exercises to ensure productivity. Guide to hierarchical directories and batch files. $$

Using PC Tools Deluxe

Walter Bruce Que

Ensures users of top disk backup, security, and compression performance. Packed with practical examples and screen shots. Highlighted tips, tricks, and cautions. $

Using Your Hard Disk

Robert Ainsbury Que

Expert DOS user tips for organization, file management, and security. Disk features over 14 great utilities that improve computer performance. $$

Windows 3 Quick Reference

Que Development Group Que

Instant reference to all vital Windows fundamentals. Features alphabetical command listing to make information easy to find. $

Windows 3 QuickStart

Person and Rose Que

Emphasis on examples and step-by-step instruction and covers linking Excel, Word, and PageMaker for greater efficiency. $

Texts

A Quick Guide To DOS

Dill South-Western

Provides comprehensive instruction for DOS, the industry standard operating system for IBM PCs and compatibles. Students learn about internal and external commands, directories, file management, batch files, and more. $

AppleWorks 3.0: Learning Through Applications

Deborah Wendt Glencoe

Uses a learn-by-doing approach that interweaves the teaching of program features with continuous practice exercises. This refreshing approach focuses on the latest release of the most popular integrated software package for the Apple II family of computers. $

Computer Applications: Building Skills for School or Work

Debra Wendt West

A collection of interesting, challenging practice applications will help your students extend and perfect their computer skills! All the activities in Computer Applications are generic and can be used with almost any software. $

Computer Concepts

Shelly, Cashman, & Waggoner South-Western

This full-color, up-to-date text offers a balanced treatment of micro and mainframe technologies and contains 15 chapters with concise chapter summaries, review questions, controversial issues for discussion, and research projects for enrichment. $$

Computer Confidence: A Challenge for Today

Clark and Oswalt South-Western

Newly revised and completely reorganized for improved instruction, this full-color text and courseware package introduces junior-high students to basic computer literacy while it helps them discover uses for computers in their own lives. $

Computers and Information Processing: Concepts and Applications

Clark, Allen, and Klooster South-Western

Provides a sound information processing base on which to add available supplements to create a truly versatile and integrated package. $$$

Computer Literacy Through Applications

Kurshan, November and Stone Glencoe

An ideal balance of activities and applications on and off the computer completely involves students of every ability and this is the only program you'll find with complete software support. $$

Computers for Managing Information
Bergerud and Keller Regents/Prentice Hall
$$

Computers: Tools for Today
Hardman, Melnyk and Mandell West
Available in three versions, it teaches microcomputer applications, computer literacy, and computer programming specifically for the computer in your school. Whether your students work on Apple IIs, IBMs, or Macintoshes, they will find it easy to practice all the lessons in the texts. $$

Computing Today
Mandell, Basinger, and Fiscus West
Divided into three sections, Computing Today covers: microcomputer applications, computer literacy, and BASIC programming. With this well-organized approach, your students will quickly gain computer confidence and proficiency. $$

Hard Disk Management
Gookin Regents/Prentice Hall
Presents practical instruction on organizing and managing a hard disk. $

Hypergraphics for Use with Computer Concepts
South-Western
Covers the 15 chapters of Computer Concepts and uses color graphics, animation, and interactivity to present content from the textbook. $$$$$$

Increasing Your Productivity with DOS
Rick Williams Glencoe
Students will learn all about DOS, including how to set up files, create directories, and format disks. Through the use of the Student Data Disk, students master steps in a logical progression and are given the opportunity to measure their progress through practice and challenge exercises. $

Introduction to Information Processing, 4th Edition
Robichaud, Muscat, and Hall Glencoe
Ideal for either a one-year or half-year introductory course in data/information processing, this program is especially designed for teachers and students who are new to the field. This edition offers a greater emphasis on microcomputers and software applications. $

Microcomputer Business Applications
Instructional Materials
Job sheets and accompanying data disks coincide with APPLEWORKS and DESKMATE software. Covers electronic filing, personnel records management, accounting, inventory control, financial records management, communications, and planning. Appropriate for all business, office, and marketing programs. $$

Microcomputers: Concepts, Skills and Applications
Flynn and Mandell West
Designed for versatility, this textbook of generic microcomputing essentials combines with any of the five software-specific Computer Skills Resource Guides to accommodate any classroom situation. This flexible supplement package gives you the freedom to change your software at any time. $

PC Power: Microcomputer Applications
Klemin and Harsha Glencoe
A text-software program that supports a broad-based course in microcomputer concepts and applications. It provides students with the most complete hands-on PC training. $

Understanding Computers Through Applications
Kurshan, Morse, and November Glencoe
An innovative entry-level course for computer applications that combines "air-quality" video, commercial software hands-on activities, and a thorough Teacher Guide to make computer use more relevnat and exciting for all students.
In Press

Understanding Microcomputers
Instructional Materials
Basic computer literacy for those with no computer experience. Covers choosing a computer system and selecting, buying, and using computer hardware and software. $

Windows: Quick Start, Version 3
Bergerud and Busche South-Western
Designed as a supplement to teach the use of Microsoft Windows 3.0 in an applications software course. Also appropriate for use as a stand-alone in a short-term or seminar course. $

Text Workbooks

Computer Concepts with AppleWorks Tutorial and Applications
Waggoner and Kelly South-Western
Includes an introduction to Pro-DOS and an additional 15-lesson tutorial and applications section. $$$$

Computer Concepts with Microsoft Works Tutorial and Applications Section
Waggoner and Price South-Western
Includes an introduction to DOS plus an additional 17-lesson tutorial and applications section. $$

Computers and Information Processing: Concepts and Applications
Clark, Allen, and Klooster South-Western
Provides a sound information processing base on which to add available supplements to create a truly versatile and integrated package. $$$

Help with Computers, 2nd Edition
June Atkinson Glencoe
Newly revised edition provides greater emphasis on the various kinds of business and personal software as well as various ways of entering data, such as mice and scanners. Other topics include what computers can and cannot do; computer ethics and security; and computers in home, school, and work. $

Learning with Hypercard
Hofmeister and Rudowski South-Western
Has 31 units, each divided into a main project and five additional projects dealing with the same skills. Each main project is broken into steps in which four or five new skills are taught. $$

Macintosh: Quick Start

Chochran South-Western

Covers the basics of how to use the Macintosh in just 10 one-hour sessions. When they finish, students will know the steps needed to work on any Mac—Mac Plus, SE, Classic, or LC—and they will feel comfortable using it. $

Videos

Amy D. Wohl Speaks on End-User Computing

Wohl South-Western

Allows you to see and hear how the office of today evolved and what the future holds for office technology. $$$$

Computer Visions—A Video Excursion Into the World of Computers

IA Associates South-Western

A three videocassette program to aid development of computer literacy. It features 13 segments covering basic computer terms and concepts; the information processing cycle —input, processing, output, and storage; and the role of computers in our technological society. $$$$$$

Hello PC

Teaching Aids Inc.

An easy-to-watch and learn system that makes it one of the most widely used methods of computer training today. See how to begin operating your PC, care for disks, reading of disks. $$

How to Master the Macintosh Computer System 7.0

MarkED

Series of three videos. $$

Insight Into Office Automation

Saffer South-Western

An MLS videotape/text package that provides a basic foundation in each of the five technologies—data processing, word/information processing, communications, image/voice processing, and voice processing. $$$$$$

Introduction to HyperCard 2.0, HyperCard: Video 1

MacAcademy

Creating cards, stacks, fields, backgrounds, graphics, menus, tools, home stacks, and basic Hypertalk scripts is taught. $$

Introduction to HyperCard 2.0, Hypercard: Video 2

MacAcademy

Scripting, layering, handlers, special buttons, user defined functions, objects, tracking script, and X commands are taught. $$

Introduction to HyperCard 2.0, HyperCard: Video 3

MacAcademy

Stack kit, power tools, power menus, pallet maker, inventory cards, editing cards, reports, and resource mover are taught. $$

Learning DOS

Teaching Aids Inc.

Shows you how to use DOS (Disk Operating System); 3.3 and earlier log-on drive and set time and date; use DIR (directory) commands; how to format, copy, and erase discs; how to name, copy, rename, and delete files. You work through step-by-step examples. $

MacProject II: Video 1

MacAcademy

You will learn: what a project is, sequencing, editing the chart, estimating, time durations, finding the critical path, and attaching information to tasks. $$

MacProject II: Video 2

MacAcademy

You will learn: allocating resources, creating a histogram, balancing resources, budgeting the project, creating subprojects, typing multiple projects together, using the chart, creating reports, and working with resolve. $$

Mary M. Ruprecht Speaks on End-User Computing

Ruprecht South-Western

Developed by a leading office technology consultant, explains the evolution of end-user tools in the computerized business environment and illustrates the impact of this technology on society, business, and individuals. $$$$$$

Square One: An Introduction To Computers

Teaching Aids Inc.

Whether you realize it or not, computers have become an integrated part of everyone's life. Computer circuitry is now found in the cars we drive, the stores where we shop and in most of today's businesses. $$$

Where's the Any Key: How To Use Computers To Automate Your Office

Teaching Aids Inc.

This comprehensive video is the ideal way to introduce computers to beginning business students, existing office staff, management planning seminars or just for anyone who wants to know how computers can improve their efficiency. $$$$

Your First Computer

Teaching Aids Inc.

Shows and explains how a computer can work for you, the main parts of the computer (CPU, monitor, keyboard, modem, mouse, printer), how computers store and retrieve information, floppy and hard drives, differences between hardware and software, and the best buying decisions for your needs. $

Software—MS-DOS, Macintosh, Apple

AppleWorks 3.0: Learning Through Applications

Deborah Wendt Glencoe

Uses a learn-by-doing approach that interweaves the teaching of program features with continuous practice exercises. This refreshing approach focuses on the latest release of the most popular integrated software package for the Apple II family of computers. $ AP

Applications for Your Computer and You
Groneman and Jaderstrom South-Western
Designed for microcomputer applications or computer literacy courses in grades 7-10, this text workbook can be used with virtually any brand of computer. Students can practice the skills they've already learned from computer software tutorials or instruction manuals. $$ MS, MAC, AP

Computer Applications and Concepts
Groneman and Jaderstrom South-Western
Gives students hands-on practice completing computer applications involving business, school, and personal situations. $$ MS, MAC, AP

Computer Concepts with AppleWorks Tutorial and Applications
Waggoner and Kelly South-Western
Includes an introduction to Pro-DOS and an additional 15-lesson tutorial and applications section. $$$$ AP

Computer Concepts with Microsoft Works Tutorial and Applications Section
Waggoner and Price South-Western
Includes an introduction to DOS plus an additional 17-lesson tutorial and applications section. $$$ MS

Computer Explorations for Business
Goldman and Furjanic Glencoe
Helps acquaint students with the functions of integrated, computerized business tools. In simulated job settings, students manipulate data using a simplified word processor, database, spreadsheet, and graphics tool. The program material is designed for 12 to 15 hours of instruction.
$$$$$$ MS, AP

Computer Literacy Through Applications
Kurshan, November and Stone Glencoe
An ideal balance of activities and applications on and off the computer completely involves students of every ability. This is the only program you will find with complete software support. $ MS, AP

Hard Disk Management
Gookin Regents/Prentice Hall
Presents practical instruction on organizing and managing a hard disk. $ MS

Increasing Your Productivity with DOS
Rick Williams Glencoe
Students will learn all about DOS, including how to set up files, create directories, and format disks. Through the use of the Student Data Disk, students master steps in a logical progression and are given the opportunity to measure their progress through practice and challenge exercises. $ MS

PC Power: Microcomputer Applications
Klemin and Harsha Glencoe
A text-software program that supports a broad-based course in microcomputer concepts and applications. It provides students with the most complete hands-on PC training.
$$$$$$ MS, MAC, AP

Understanding Computers Through Applications
Kurshan, Morse, and November Glencoe
An innovative entry-level course for computer applications, that combines "air-quality" video, commercial software, hands-on activities, and a thorough Teacher Guide to make computer use more relevant and exciting for all students.
In Press MS, MAC, AP

Other

MS-DOS 5 QueCards
Que Development Group Que
Speedy, efficient, and convenient command guide for beginning users. Spiral bound with FREE built-in easel. $

The World of Computer Wall Charts
Teaching Aids Inc.
Titles are: Terms, Terms, Terms; Protection Against the Elements; Portrait of the Peripherals; A Peek Inside a Micro; Anatomy of a Disk; It's As Basic As 1-2-3; ...But What Can It Do?; Your Future In Computing; Computers In Everyday Life; and A Little Bit of History. $$

Transparencies for PC and MS-DOS
Dictation Disc Company
Transparencies illustrate what you are describing so that your students can see what you are telling them to do. This saves valuable time. The transparencies enable each function to be taught more rapidly by pointing to illustrations. $$$$$$

Keyboarding

Reference Books

Checkmate—Production Document Check
Haugo, Hausmann, and Jackson South-Western
Checking student keyboarding/typewriting documents completed from Century 21 is now an easy matter—automatically. Working with commercial word processors, this product has two ways to assist in your word processing and keyboarding courses. $$$$$$

Paradigm Reference Manual
Branchaw and Bowman Paradigm
Designed primarily for use as a supplementary text for all titles in keyboarding, shorthand, office procedures, word processing applications, machine transcription, business English, and business communications. $

Texts

AppleWorks Guide for Century 21 Keyboarding, Formatting, and Document Processing

Stacy South-Western

Provides students with instructions for using AppleWorks software. Versions 2.0 and 3.0, for Lessons 1-150 in the Century 21 textbook. Word processing functions are presented and applied in the order required by the Century 21 activities. $

Basic Keyboarding and Formatting

South-Western

Fits smoothly and efficiently in keyboarding courses of one semester or less. Develop mastery of the alphabetic and numeric keyboards and learn how to format documents in computer-compatible styles. $$$$$$

Glencoe Keyboarding: A Technique Approach

Lloyd Bartholome Glencoe

$

Gregg Junior High Typing, 3rd Edition

Cook, Morrison, and Trytten Glencoe

$

Gregg Keyboarding and Personal Applications

Lloyd, Winger, Johnson, Morrison, and Hall Glencoe

For junior high and high school students, this one-semester personal-use keyboarding course employs the techniques on which Gregg's solid reputation is built. It teaches students the skills they need to type reports and letters—while orienting them to microcomputers and information processing. $

Houghton Mifflin Information Processing: Keyboarding, Formatting

Chiri, Kutsko, Seraydarian, and Stod Glencoe

Organized for mastery, it focuses on instruction, paces practice, measures mastery...and offers more review and reinforcement than any other program available today. $

Houghton Mifflin Keyboarding and Applications

Chiri, Kutsko, Seraydarian, and Stod Glencoe

Systematically builds keyboarding skills in one semester while teaching the functions and capabilities of microcomputers, electronic typewriters, and electric typewriters. Relevant applications for personal or business use. Compatible with any equipment and any word processing software. $

Keyboarding

Lloyd, Winger, Poland, Hanson,
Rosetti, and Ober Glencoe

This text is designed to develop touch typing skills on any kind of keyboarding equipment. There is also instruction on the 10-key number pad. $

Keyboarding for Information Processing, 2nd Edition

Hanson and Rigby Glencoe

With this unique keyboarding text, students learn all the basic skills needed to input information using typewriter-like keyboards. Following the introduction of the home-row keys, all the keys are introduced one at a time, in nonstructured format that allows learners to progress at their own speed. $

Keyboarding For The Automated Office, Level 1, 2nd Edition

Annell Lacy Simcoe Regents/Prentice Hall

Text introduces various types of office equipment and gives extensive practice in keyboarding skills. It trains students to reach a keyboarding proficiency of at least 40 wpm and discusses correspondence, unbound reports, tables, forms, memorandums, bound reports, etc. $$

Keyboarding For The Automated Office, Level 2

Annell Lacy Simcoe Regents/Prentice Hall

Text is appropriate for a second semester of Keyboarding/Typewriting. It begins with a skills review and proceeds through various production assignments of increasing levels of difficulty. $

Keyboarding/Typewriting for Personal Applications

Haggblade and Kushner South-Western

Loaded with activities and drills, this 140-lesson package is designed to help junior high and middle school students build keyboarding and related skills. $$$$$$

Keyboarding: A Short Course, 2nd Edition

Annell Lacy Simcoe Regents/Prentice Hall

Students are taught the alphabetic, numeric, and symbols keys—including the ten-key pad—with ample drill material in each lesson to achieve a minimum competency of 28 words per minute. $

Personal Typing, 4th Edition

Lloyd, Hosler, Hosler, and Hall Glencoe

$

Practical Keyboarding: A Short Course

Tanner and Tanner Regents/Prentice Hall

This unique book/disk package quickly develops keyboard skills through computer interaction—it teaches and monitors correct fingering technique, develops rhythmic typing, and gives split-second feedback on typing performance. $

Professional and Personal Keyboarding and Typewriting

Bennett and Wanous South-Western

Designed for individuals who want to learn how to use the keyboard for personal communication, this 75 lesson textbook helps students learn the touch system and composing at the keyboard. $$$$$$

Reports! Formatting Applications

Grill South-Western

Provides flexibility and intensive review for typing a variety of report documents to assist students, teachers, or office personnel. $

Type with One Hand

Richardson South-Western

This text provides people who have the use of only one hand with a keyboard approach to develop, in the shortest possible time, those skills and techniques necessary to type with speed and accuracy. $

WordPerfect Guide for Century 21 Keyboarding, Formatting, and Document Processing
Eisch South-Western
Provides students with instructions for using WordPerfect software, Versions 5.0 and 5.1, for lessons 1-150 in the Century 21 textbook. Word Processing functions are presented and applied in the order required by Century 21 activities. $$

Text Workbooks

121 Timed Writings with Selected Drills
Clayton South-Western
Revised to include new material and 20 more timed writings than the previous edition, this spiral-bound textbook provides essential drill practice in beginning or advanced typewriting/keyboarding classes. $

Basic Keyboarding/Typewriting Drills
Langford South-Western
This two-color edition has been completely rewritten and thoroughly modernized to incorporate the latest office technology. All drills are based on the results of vocabulary-usage research and skill-building studies. $

Data Entry Activities for the Microcomputer
South-Western
Develops dexterity and accuracy in keyboarding alpha and alphanumeric characters. Also increases familiarity with common data entry procedures through 13 lesson-reinforcing activities on the software. $$$

Keyboarding for the Automated Office, Level 3
Annell Lacy Simcoe Regents/Prentice Hall
Contains a series of integrated projects that place students in a variety of office situations (a law office, university, hotel/motel conference center, public accounting firm, human resources/ personnel office, public relations and communications center). $

Keyboarding/Information Processing—Supplementary Application
Belis and Dembo South-Western
Designed to provide instructors with additional supplementary applications for use in keyboarding, word/information processing, desktop publishing, and computer applications courses. $$

Keyboarding Mailable Letters, 4th Edition
Brendel, Krause, Eide, and Holmes Glencoe
Reviews the basic rules of language arts while it provides practice in preparing realistic business correspondence. Each project includes a model letter to illustrate correct format, a rough draft, a draft that contains errors (to be corrected by the student), and a handwritten letter. $

Keyboarding Skillbuilder
Louis Prete Glencoe
Keyboarding Skillbuilder consists of 182 drills designed for speed building, 21 timed writings, and 12 drills for improving accuracy. $

Skillbuilding: Building Speed and Accuracy on the Keyboard
Eide, Holmes, and Klemin Glencoe
An intensive program for developing students' keyboarding speed and accuracy skills. It combines Gregg's unique pretest/practice/posttest diagnostic routine and the power and flexibility of the microcomputer. $

Spelling Dynamics for Typing Speed
Nadler Dictation Disc Company
This typing book drills your students on the 500 most common spelling errors found in business letters. Includes intensive repetition in a variety of formats to cement these spellings into the students' minds. $

Statistical Typing with Tabulation Problems
Kushner and Wanous South-Western
Features review and skill-building drills that center on the use of figures and symbols, as well as time-saving centering and tabulating procedures. $

Touch-Type the Computer in Four Hours
Frank Donnelly Dictation Disc Company
This book teaches your students the full alphabetic keyboard in four hours without looking at the keys. It contains many pages of timed drills on easy, average and difficult material. With enough practice they can, from this book alone, reach a speed of 100 wpm. $

Touch 'N' Type
Frank P. Donnelly Dictation Disc Company
Provides swift keyboard memorization and high typing speed. Has 40 pages of timed writings for those teachers who feel they need more material. $

Triple-Controlled Timed Writings
Agnew and Grill South-Western
This supplementary typewriting textbook provides practice material to improve straight-copy performance and measure basic skill. Technique and speed drills are provided to help students further develop their skills. $

Videos

Keyboarding For The Automated Office, Level 1, 2nd Edition
Annell Lacy Simcoe Regents/Prentice Hall
Text provides 75 lessons that introduce various types of office equipment and give extensive practice in keyboarding skills. It trains students to reach a keyboarding proficiency of at least 40 wpm and discusses correspondence, unbound reports, tables, forms, memorandums, bound reports, etc. $$

Software—MS-DOS, Macintosh, Apple

Data Entry Activities for the Microcomputer
South-Western
Develops dexterity and accuracy in keyboarding alpha and alphanumeric characters. Also increases familiarity with common data entry procedures through 13 lesson-reinforcing activities on the software. $$$ MS, AP

Gregg Microcomputer Keyboarding and Document Processing

Johnson, Hall, and Stanley Glencoe

Includes complete courseware that directs students through the entire lesson. Many activities are scored for speed and/or accuracy (all timings and language arts applications, and most of the production activities). $$$$$$ MS, MAC

Houghton Mifflin Drill and Practice Keyboarding Software

Glencoe

Timed pretest determines ability level; program sets individualized practice goals. Drills match each goal precisely. Posttest measures progress. The program is easy to use and appropriate for any keyboarding/typewriting program. $$$$$$ MS, MAC

Houghton Mifflin Typewriting Timed Writing Software

Glencoe

The easiest way yet to administer and score timed writings—on the microcomputer! Students choose from over 100 paragraphs displayed right on the screen, then see their speed and accuracy scores in minutes. $$$$ MS, MAC

Keyboarding for the Physically Handicapped

Jack Heller Glencoe

Enables instructors to utilize microcomputers to teach keyboarding to the physically handicapped. The program presents a menu listing each of 19 disabilities. After the learner selects the appropriate menu item, the program provides an individualized touch typing system. $$$$$$ MS, MAC

KeyStrokes: Keyboarding for Information Entry

Glencoe

Teaches and reinforces keyboarding skill. Program provides instruction, evaluates performance, and records student scores. Use as a self-teaching keyboarding course or a supplement for review and reinforcement. Disk contains a hidden "teacher mode" for course management and recordkeeping. $$$$$$ MS, MAC

Pacing Software for Progressive Typewriting Speed Practice

JBM Associated, Inc. Glencoe

Enables students to increase their keyboarding speed and accuracy while working with a microcomputer. The program provides practice for one- and three-minute timings. As students work on the timing, a pacing device on the screen moves along at the student's speed goal. $$$$$ MS

Practical Keyboarding: A Short Course

Tanner and Tanner Regents/Prentice Hall

This unique book/disk package quickly develops keyboard skills through computer interaction—it teaches and monitors correct fingering technique, develops rhythmic typing, and gives split-second feedback on typing performance. $

Skillbuilding: Building Speed and Accuracy on the Computer Keyboard

Eide, Holmes and Klemin Glencoe

Introduces and explains the use of the text and administers and scores the timed writings. Using the results of the diagnostic timing, it prescribes and delivers the most appropriate practice lessons. It also guides students through the lessons and maintains records of students' progress. $$$$$$ MS

Skillbuilding: Building Speed and Accuracy on the Keyboard

Eide, Holmes, and Klemin Glencoe

An intensive program for developing students' keyboarding speed and accuracy skills. It combines Gregg's unique pretest/practice/posttest diagnostic routine and the power and flexibility of the microcomputer. The result of this combination is a program that permits individualization of training. $ MS

Touch-Type the Computer In Four Hours

Frank Donnelly Dictation Disc Company

This book teaches your students the full alphabetic keyboard in four hours without looking at the keys. It contains many pages of timed drills on easy, average and difficult material. With enough practice they can, from this book alone, reach a speed of 100 wpm.Timing diskette. $$ MS

Simulations

Keyboarding Position Simulation: An Interactive Office Automation

Mitchell and LaBarre Paradigm

Goes beyond the eye/hand coordination of depressing keys based on visual recognition. By completing the activities and documents for this simulation, students will have had a opportunity to apply a broad range of skills and knowledge related to keyboarding in a business setting. $

Pleasure Island: A Typewriting Simulation

Ralph M. Holmes Glencoe

While students are employed in a large amusement park for 25 to 30 hours, they practice various secretarial and office support skills using realistic business procedures. $

Sidewalk Surfin' II: A Typewriting Simulation

Ralph M. Holmes Glencoe

Students gain practical experience preparing letters, memos, tables, and reports. The 15- to 20-hour simulation gives clear, concise instructions and may be used with electronic typewriters and microcomputers. $

SoftWorld: A Typing Practice Set

Scot Ober Glencoe

SoftWorld, Inc., a firm that develops microcomputer software, is the high-tech setting for this 15- to 20-hour practice set. The jobs can be completed on any type of equipment, from standard typewriters to dedicated word processors and microcomputers. $

Snow Country II: A Document Processing Practice Set

Reynolds South-Western

A practice set in which students work as entry-level typists. Students process letters, reports, memorandums, tables, purchase orders, and invoices. $

The Odyssey: A Typewriting Simulation

Ralph M. Holmes Glencoe

A sports/entertainment complex is the setting for this self-paced 25 to 30 hour job training program. Students draft letters, complete insurance forms, prepare charts,type from rough drafts. $

Station KBOE-TV: A Typing Practice Set

Olive D. Church Glencoe

This 20-hour, 20-job practice set in convenient text workbook format makes an exciting end-of-course project and means of evaluation for introductory typing. $

Other

Computer Keyboard Posters

South-Western

These new, larger posters enhance any classroom where microcomputers are used. Available in three versions, the four-color posters illustrate popular computer keyboards found in the classroom. $$

Keyboarding/Typewriting for Personal Applications

Haggblade and Kushner South-Western

Loaded with activities and drills, this 140-lesson package is designed to help junior high and middle school students build keyboarding and related skills. $$$$$$ Audiocassettes

Letterheads and Forms for Use in Typewriting, Transcriptions, and Office Procedures

South-Western

The letterheads and forms in this versatile package may be used in typewriting, word processing, or office procedures classes. $

Professional and Personal Keyboarding and Typewriting

Bennett and Wanous South-Western

Designed for individuals who want to learn how to use the keyboard for personal communication, this 75 lesson textbook helps students learn the touch system and composing at the keyboard. $$$$$$ Audiocassettes

Touch-Type the Computer in Four Hours

Frank Donnelly Dictation Disc Company

This book teaches your students the full alphabetic keyboard in four hours without looking at the keys. It contains many pages of timed drills on easy, average and difficult material. With enough practice they can, from this book alone, reach a speed of 100 wpm. $ Timing Cassette

Word Processing

Reference Books

10 Minute Guide to Q&A

Sams Sams

Explains essential word processing and database operation in 15 to 20 quick exercises. Exploring merge functions and intelligent assistant operations, each exercise establishes a goal then offers a tutorial to complete that goal in 10 minutes or less. $

10 Minute Guide to WordPerfect 5.1

Murray and Sabotin Sams

This is the quickest way to learn WordPerfect 5.1. All essential editing, entering, moving, and copying text fundamentals are taught in 15 to 20 short lessons. Each lesson includes a clearly-defined goal and a short tutorial to reach that goal in 10 minutes or less. $

AppleWorks 3.0: Learning Through Applications

Deborah Wendt Glencoe

Uses a learn-by-doing approach that interweaves the teaching of program features with continuous practice exercises. This refreshing approach focuses on the latest release of the most popular integrated software package for the Apple II family of computers. $

Applications for Microcomputer Software

Janet R. Wilson Regents/Prentice Hall

With challenging projects and case studies—for beginning through advanced word processing, spreadsheet, or database users—this volume can be used with any software and enhances students' problem-solving abilities using the microcomputer. $

Career Applications for Word Processing, 2nd Edition

Patricia A. Custer Regents/Prentice Hall

Text trains students for careers in general business, insurance, financial, legal, and medical firms. It encourages proficiency through keyboarding and editing typical documents, using the format techniques and vocabulary of each career specialty. $

Communicating in Business & Industry, 2nd Edition

Thomas W. Comstock Delmar

A concise, how-to presentation of verbal and nonverbal communication skills. Listening, reading, telephone and computer skills, job applications, and body language are addressed. Up-to-date coverage includes: FAX and cellular communications, word processing and desktop publishing, time management, etc. $

Computer Explorations for Business

Goldman and Furjanic Glencoe

Helps acquaint students with the functions of integrated, computerized business tools. In simulated job settings, students manipulate data using a simplified word processor, database, spreadsheet, and graphics tool. A telecommunications tool is simulated. Sophisticated equipment is not needed. $$$$$

Glencoe Word Processing: A Practical Guide to Concepts and Applications

Marianne Levin-Cohen Glencoe

$

Increasing Your Productivity with WordPerfect 5.1
Haiduk and Laby Glencoe

The best way to learn the fundamentals of WordPerfect is through hands-on, practical experience, and that's what your students get with this comprehensive step-by-step tutorial. Through the use of the Student Data Disk, students master steps in a logical progression. $

Information Processing: Concepts and Applications
Dennis P. Curtin Regents/Prentice Hall

This brief overview introduces students to major core concepts they will encounter in virtually all software packages. Case studies in the Lab Manual on DOS. $

Introduction to Microcomputers Using PC-Type, PC-Calc, PC-File
J. Robert Buck Regents/Prentice Hall

$

Introduction to Office Systems: An Abridgement of Word and Information Processing
Bergerrud and Gonzalez Regents/Prentice Hall

$

Introduction to Word/Information Processing, 2nd Edition
Hensen, Sanders, and Mason Glencoe

$

Mastering WordPerfect 5.1
Mary Campbell Glencoe

Uses a mastery approach to teach WordPerfect Releases 5.0/5.1. Lessons are brief, each focusing on a single learning objective. As students achieve each objective, they master a new skill. Each new skill introduced builds upon the last skill mastered. $

Microcomputer Business Applications and Projects
Busche and Esbensen Regents/Prentice Hall

Text enables readers to become comfortable with four application software areas: database management, word processing, spreadsheets, and business graphics and presents IBM computer-based activities. Contains extensive illustrations throughout. $

Microsoft Word 4.0 Macintosh, Easy Reference Guide
Morrison South-Western

This compact reference guide provides a command summary for Microsoft Word and instructions for using these commands in a simple, quick, easy-to-use format. Commands are arranged by function, in alphabetical order, and are highlighted through the use of graphics. The reference guide is designed for students who are already familiar with Microsoft Word but who may need an instructional reference for executing the various commands. $

Microsoft Works 2.0 on the Macintosh
Janet R. Wilson Regents/Prentice Hall

Text is ideal for users at all levels of experience and reinforces commands covered with exercises and questions. Lists features covered in each chapter. $

Microsoft Works Quick Reference
Que Development Group Que

Quick, easy format provides alphabetical command listings. Covers all Works modules with explanations for desired word processing, database, and spreadsheet results. $

PC Power: Microcomputer Applications
Klemin and Harsha Glencoe

A text-software program that supports a broad-based course in microcomputer concepts and applications. It provides students with the most complete hands-on PC training. $

Paradigm Reference Manual
Branchaw and Bowman Paradigm

Designed primarily for use as a supplementary text for all titles in keyboarding, shorthand, office procedures, word processing applications, machine transcription, business English, and business communications. $

Quick Reference Guides
AppleWorks, Ver. 2
AppleWorks, Ver. 3
DisplayWrite 4
Microsoft Works
MultiMate
MultiMate Adv. II & Ver. 4
Professional Write
WordPerfect 4.2
WordPerfect 5.0
WordPerfect 5.1
WordStar 6.0

Dictation Disc Company

These software specific Quick Reference Guides are correlated to your book. Your students follow the illustrated instructions which virtually put their fingers on the correct keys. $

Reference Manual: for the Office, 7th Edition
House and Sigler South-Western

A valuable reference for people engaged in office work, as well as an effective textbook for those preparing to enter the field. $

The Best Book of Microsoft Word for the Macintosh
Rob Krumm Samsn

Covers all Word 4.0 features by showing how to create various types of documents. The book begins with the simplest and most commonly used functions and proceeds to complicated and sophisticated operations by applying them to specific hands-on examples. $

The Best Book of Microsoft Works for the PC, 2nd Edition
Ruth K. Witkin Sams

Examines the latest Version, 2.0. Complete with a full tutorial, it provides in-depth application examples to show the business professional or home user how to use the software to enhance productivity. $

The Best Book of Professional Write and File
Wolf and Kraynak — Sams

Newcomers to word processing and database management will discover the many features of these two powerful programs. Through complete examples and practical applications, this book shows how easy these programs are to understand and use. $

The Best Book of WordPerfect Version 5.0
Vincent Alfieri — Sams

From formatting a simple letter to setting up time-saving macros, this book unravels all of the features and updates of Version 5.0. With detailed explanations, clear examples, and screen illustrations. First-time and advanced users alike will use this as their essential resource. $

The Best Book of WordStar, 2nd Edition
Alfieri, Revised by Wolenik — Sams

Completely updated for WordStar Versions 5.5 and 6.0. Graphic icons point out new features such as pulldown menus, advanced page preview, and scalable fonts. Users also learn step-by-step through comprehensive tutorials. Includes a quick reference command guide! $$

The First Book of LotusWorks
Sams

An excellent beginner's guide to this broad-based and practical integrated software. Quick Steps lessons and a quick command reference are included to provide the quickest, most efficient learning possible. Coverage includes spreadsheet, graphics, word processing, and communications. $

The First Book of Microsoft Works for the PC
Debbie Walkowski — Sams

Step-by-step information brings beginners quickly up to speed with Microsoft Works. Quick Steps tutorials take readers through Works' word processing, spreadsheet, database, graphics, and communications systems. Focuses on each module separately and presents performance tips for integrating them. $

The First Book of PC-Write
Rebecca Kenyon, Ph.D. — Sams

Provides a complete introduction to PC-Write and PC-Write Lite shareware word processing systems. Written with the beginner in mind, this book offers easy-to-understand instructions for basic operations—including document creation, editing, and text manipulation. $

The First Book of the Mac
Rose and Rose — Sams

Here's the first word on the Macintosh, complete with all essential Mac information! Performance tips and techniques make sure Mac beginners get started quickly and coverage of desktop publishing, spreadsheet, word processing, and HyperCard capabilities make them productive. $

The First Book of WordPerfect 5.1
Kate Miller Barnes — Sams

Offers an easy-to-read, concise introduction for first-time users, as well as a handy reference for experienced users. It covers all the latest features of this newest release. Quick Steps, key notes, reference tables, and reviews are included to help guide the reader quickly through the text. $

Thomason Learning Series
Annette J. Thomason — Houghton Mifflin

Texts in series: New Learning Lotus 1-2-3, Release 2.2 with coverage of Release 2.3; Learning WordPerfect 4.2; Learning WordPerfect 5.0; Learning WordPerfect 5.1; Learning Lotus 1-2-3; and Learning dBase III Plus. $

Using MacWrite
Mark Bibo — Que

Quick Start tutorials ensure fast productivity. Features a convenient quick reference section and tear-out command chart. $

Using Professional Write
Katherine Murray — Que

Full-featured approach to affordable word processing! Quick Start tutorials ensure improved word processing skills. Professional advice for macro creation and advanced printing techniques. $

Using WordPerfect 5
Charles O. Stewart III, et. al. — Que

Classic Que best-seller on the basics of WordPerfect 5! Quick Start tutorials ensure mastery of macros, styles, and other features. Features tear-out command reference and introduction to Version 5 for 4.2 users. $$

Using WordStar, 3rd Edition
Steve Ditlea — Que

Provides the latest tips and techniques for improved word processing! Easy-to-use tutorials and reference information for confident start-ups and includes icons for quick-key shortcuts. $$

Webster's New World Writer, Student Edition Book/Disk Package
Korenthal Association, Inc. — Regents/Prentice Hall

$

Welcome to WordPerfect 4.2
CIMC

Includes getting started, bold, centering, auto indent, reveal codes, printing, cursor movement keys, text deletion features, margins, tabs, spacing, print styles, hyphenation, move, block, headers and footers, widows/orphans, page breaks, centering vertically, spell check, search, thesaurus, etc. $

Word Division Manual 3rd Edition
Perry and Silverthorn — South-Western

Provides the correct spelling and division of those words most commonly used in business writing. Over 20,000 words are included. $

Word and Information Processing: Concepts of Office Automation
Bergerud and Gonzalez — Regents/Prentice Hall

$$

Word Processing Applications for Office Professionals
McKay and Hopkins — Regents/Prentice Hall

$

WordPerfect 5.0-5.1: Easy Reference Guide
Giglia South-Western

This handy reference guide allows students to reference how to perform the various functions of WordPerfect 5.0 and 5.1 quickly and easily. Each function lists the keystrokes needed to complete the function in a step-by-step manner. With this reference guide, students no longer need to rely on their memories or a cumbersome technical manual. $

WordPerfect 5.1 In Business
Neil Salkind Sams

Complete with ready-to use style sheets and templates for business use, this book/disk set helps users reduce the time eaten away by ordinary tasks. The disk includes samples for legal forms, contracts, business letters, reports, and more. $$

WordPerfect 5.1 Quick Reference
Que Development Group Que

Instant reference for vital operations. Offers alphabetical listings to make information easy to find. $

WordPerfect 5.1 QuickStart
Que Development Group Que

Features numerous illustrations to reinforce learning and step-by-step instructions demonstrate document production, pull-down menus, file merging, and mouse manipulation. $

WordPerfect 5.1 Tips, Tricks, and Traps
Stewart, Rosenbaum, and Shore Que

Power techniques for WordPerfect users! Features hundreds of timesaving techniques. Covers style, macros, equation editing, keyboard mapping, and merge commands. $

WordPerfect PC Tutor
Que Development Group Que

The perfect book/disk WordPerfect learning tool! Features practical on-screen, hands-on exercises for fast productivity and step-by-step examples teach readers to create, edit, and print professional documents. $$

Texts

Learning to Use Microsoft Works, IBM Version
Price South-Western

This full-color introductory text develops students' understanding of Microsoft Works. $

Office Information Systems: Concepts and Applications, 3rd Edition
Sharon Lund O'Neil Glencoe

Continues to provide students with the knowledge and tools for the age of information in the most user-friendly way possible. For full-semester courses, the text provides in-depth knowledge of word processing as well as information systems. $

Office Procedures: Learning and Instruction
Olinzock and White South-Western

Facilitates the development of the skills and knowledge necessary to plan, organize, and implement a successful office procedures program. $

Procedures for the Modern Office
Pasewark and Oliverio South-Western

Designed to prepare students for a wide range of entry-level office jobs. Topics such as word processing, micrographics, and reprographics are discussed, since rapid developments in these fields are changing traditional office procedures. $

Understanding Microcomputers and Application Software
Bergerud, Busche, and Gonzalez South-Western

Offers comprehensive, state-of-the-art coverage on everything from word processing to integrated software and desktop publishing. $$

Using Computer in our Society: with AppleWorks
Kelly and Watts South-Western

Students learn to use the popular AppleWorks software for word processing, database, and spreadsheets, as well as mail merge. In addition, they learn simple programming with Apple BASIC. $

Word Processing Applications and Exercises, 2nd Edition
Sandra Muehlman-Shortt Regents/Prentice Hall

Text correlated with the updated 50 topics in Dennis P. Curtin's "Word and Information Processing on Microcomputers Series." $

Word Processing Applications in Automated Offices
Annell Lacy Simcoe Regents/Prentice Hall

Text demonstrates how to set up and input commands to create and generate text. It covers teleconferencing, electronic filing, optical character referencing, phototypesetting, telex and facsimile transmission. $

Word Processing Applications: Basic to Advanced
Platt and Gilson Glencoe

Enables students to perfect their word processing skills. A complete range of functions is covered, from the simplest to the most advanced. Designed so that it may be used in advanced applications classes as well as in beginning classes. $

Word Processing on Microcomputers: Systems and Procedures
Dennis P. Curtin Regents/Prentice Hall

$

Word Processing on the Job
Rosemarie McCauley Glencoe

$

Word Processing Skills and Applications Using Wang Systems, 2nd Edition
Agnes Fricano Cecala Regents/Prentice Hall

$$

Word Processing: Concepts and Careers, 4th Edition
Bergerud and Gonzalez Regents/Prentice Hall

$

WordPerfect 5.0

CIMC

Includes getting started, underline, bold, centering, auto indent, reveal codes, printing, cursor movement keys, text deletion features, margins, tabs, spacing, print styles, hyphenating, move, block, headers and footers, widows/orphans, page breaks, centering vertically, spell check, search, etc. $

Works Word Processor: Quick Start, Versions 2.0 and 1.05 IBM

Stacy South-Western

The instructions in this 64-page, self-paced volume enable readers to quickly gain proficiency using their software. $

Text Workbooks

101 Word Processing Exercises, 2nd Edition

Lloyd D. Brooks Glencoe

A short program that easily adapts to any word processing curriculum. The 101 exercises cover the major word processing skills and are divided into eight sections. At the end of each section is an integrated reinforcement exercise to reteach major concepts. $

Advanced Word Processing Productivity: Exercises and Applications

Lloyd D. Brooks EMC Publishing/Paradigm

This generic exercise book provides realistic practice using intermediate to advanced features of word processing programs. Students learn how to organize and complete a wide range of complex business documents. $

Advanced WordPerfect 5.0-5.1: Tutorial and Applications, Including Desktop Publishing

Sullivan South-Western

Now students who know WordPerfect basics can learn how to use the advanced features of the world's number one and word processing program. This tutorial presents the advanced commands in WordPerfect 5.0 and 5.1 in an easy-to-follow, step-by-step fashion and gives students time-saving tips and techniques. They will also learn how to avoid common problems. $

AppleWorks—Integrated Applications for Microcomputers

Clayton and Park South-Western

Designed for high school and postsecondary students, this text workbook introduces students to AppleWorks and can supplement various manuals and materials from the CLARIS Corporation. $

AppleWorks Word Processing: Quick Course, Versions 2 and 3

Cruse South-Western

This test workbook provides students with an abbreviated course for learning to use AppleWorks word processing for their coursework and personal use. $

Business Skills Improvement Exercises, 2nd Edition

Barker and Lovern South-Western

Focuses on improving students' basic office skills to prepare them for the world of work. One hundred exercises cover a broad range of office skills. Completion time: 20 hrs. $

Computer Applications for Business

Iris Blanc Dictation Disc Company

Introduces students to five computer skills through sequential application materials. The learner proceeds from basic to intermediate level. Introductory course—one-two semesters, word processing, spreadsheets, integration, desktop presentation. $

DisplayWrite 4: A Practical Approach

Woo and Troop South-Western

With the help of this practical text workbook, even students with little or no word processing background will find IBM's DisplayWrite 4 easy to understand and use. Completion time: 30-40 hrs. $

DisplayWrite 4: Quick Start

Stacy and Varnon South-Western

For first-time users, this text workbook is a great tool to help them get started in a short amount of time—even if they have never used a microcomputer. $

Documents for Keyboarding and Word Processing

Carol Dreger EMC Publishing/Paradigm

This word processing applications workbook is designed to provide students with challenging, realistic documents to practice all the functions of a word processing program. $

Edited Copy for Word Processing

Dictation Disc Company

$

Editing Applications for Word Processing

VanHuss and Matthews South-Western

This intensive, activity-oriented text-workbook takes a generic, conceptual approach—first to review basic word processing functions, then to teach advanced word processing concepts and functions. Students learn to apply the concepts and functions to the specific word processing software or electronic typewriter they have available. Composing at the keyboard and working from script and rough-draft copy and forms, students encounter realistic business documents. Completion time: 25-30 hrs. $

Insight Into Office Automation

Saffer South-Western

An MLS videotape/text package that provides a basic foundation in each of the five technologies. When combined, they create integrated office systems. This versatile approach works well in a traditional classroom setting as an independent text or supplement to any course involving the survey of office automation. $

Learning to Use Appleworks

Kelly

Develops understanding of AppleWorks—the versatile software program containing word processing, database, spreadsheet, and integrated functions. $$

Learning WordPerfect 5.0 & 5.1 for IBM and Compatibles

Iris Blanc Dictation Disc Company

Speeds up learning time with the step by simple step method. The book explains why the function is used. Each new exercise reviews the previous concepts and introduces a new concept. $

Mactivities: Learning to Use the Macintosh Computer

Auvil South-Western

As first-time Macintosh users, your students learn to produce documents efficiently and quickly with this introductory guide. This spiral-bound text is divided into two parts: the first part covers the Mac's operating system; the second part guides students through the basics of word processing and paint and draw graphics. $

Microcomputers: A Practical Approach

Klemin and Harsha Glencoe

For use in one- or two-semester courses, Microcomputers provides generic applications for spreadsheet, database, graphing, word processing, integrated, and communications software. $

Microsoft Word on the Macintosh

Smith South-Western

This text workbook is designed to guide students through the software in a step-by-step manner from very simple concepts to more complex. Students are introduced to one or two concepts in each lesson. With each new concept, students perform steps of the process on the microcomputer that relate to that particular topic. Objective quizzes and documents are included to reinforce concepts. $

Microsoft Works: Tutorial and Applications, IBM Version, Macintosh Version

South-Western

For use with either Version 1.05 or 2.0, this text workbook emphasizes the features of Microsoft Works most frequently used in business. It offers instruction and applications for word processing, database, spreadsheet, communications, and integration in a simple-to-complex approach. $$

Q&A in Business

David B. Adams Sams

This complete book/disk set is packed with clear, concise instruction and ready-to-use business templates to make the Q&A database and word processing user more productive. $$

Skill Building Exercises for the Word Processor

Iris Blanc Dictation Disc Company

Book contains eleven lessons covering all phases of word processing. Each lesson provides intensive repetitive drills, and constant cumulative review of word processing functions. Every lesson is presented in a graded, systematic, cumulative fashion. $

Skill Building Word Processing Exercises

Patricia A. Custer Regents/Prentice Hall

Text is correlated with the updated 50 topics in Dennis P. Curtin's "Word and Information Processing on Microcomputers Series." It applies skills to a variety of documents. $

The Electronic Office and You: Word Processing Concepts

Boyce and Popyk Glencoe

$

The Word Processing Workbook

Margaret J. Hock Regents/Prentice Hall

$

Typing from Handwritten Copy

Dictation Disc Company

$

Using WordPerfect 5.0/5.1: Applications for Reinforcement

Anderson and Golightly South-Western

Using this publication is designed to build skills in using WordPerfect software. $

Word Processing Applications in Practice 2nd Edition

Meroney South-Western

The second edition of the popular text workbook develops proficiency with any brand of word processing software package. For use in conjunction with developers' training manuals, it gives students practice using the software to set up, format, and edit actual business documents. Completion time: 25-35 hrs. $

Word Processing Hands-On Exercises, 2nd Edition

Patricia A. Custer Regents/Prentice Hall

$

WordPerfect 5.1 Quick Course

Eisch South-Western

This easy-to-use text workbook covers all the necessary functions of WordPerfect 5.1 in a quick 12-15 hours of instruction. $

WordPerfect 5.0/5.1: Tutorial and Applications, IBM Version

Eisch South-Western

This practical text workbook makes students proficient users of the 5.0 and 5.1 versions of the WordPerfect word processing package. Taking a conversational approach, it presents information in a logical step-by-step manner. Completion time: 30 hrs. $

WordPerfect for the Macintosh: Tutorial and Applications

Eisch South-Western

This text workbook makes students proficient users of WordPerfect for the Macintosh 2.0. Taking a conversational approach, it presents information in a logical step-by-step manner. Completion time: 30-35. $

Word Processing Hands-On Exercises, 2nd Edition

Patricia A. Custer Regents/Prentice Hall

$

WordPerfect Made Perfectly Easy, 2nd Edition

Sharon Anne Fisher-Larson Glencoe

Task oriented, eliminating extraneous theory and reading. Focuses on the tasks required by office personnel working with WordPerfect 5.1. Text comes with either a 5.25" or 3.5" disk. Clip art is included where the learner will perform those tasks that simulate the desktop publishing environment. $

WordPerfect: Quick Start

Stacy South-Western

This publication gets first-time users up and running in the shortest time possible—even if they have never used a microcomputer. $

WordPerfect: Tutorial and Applications, Apple Version

Eisch South-Western

Students gain proficiency with the Apple version of the widely used word processing package. It is divided into two sections—basic and advanced. $

WordStar Release 5.0 and 5.5: Tutorials and Applications, IBM Version

Graham South-Western

This practical text workbook presents the software in an easy-to-follow, step-by-step manner. It leads students from simple to complex functions. Completion time: 30-35 hrs. $

Working Your Way Through WordStar Release 4, 2nd Edition

Graham South-Western

The word processing program is presented in a nontechnical, step-by-step style. Each lesson contains specific objectives, command instructions, recaps of commands, and both written and computer exercises. Completion time: 30-35 hrs. $

Videos

MacWrite II: Video 1

MacAcademy

You will learn components, filing, windows, page numbers, page setup, printing, setting tabs, preferences, title page, header box, selecting text, columns, and save as. $$

Microsoft Works 2.0: Tape 1: Integration

MacAcademy

You will learn organizing files, mail merge, multiple windows, draw tools, importing graphics, auto dialing, importing spreadsheets, sorts, importing database, phone settings, multiple columns, spreading text, telecommunications, importing tips, importing charts, and capturing text. $$

Microsoft Works 2.0: Tape 2: Word Processing

MacAcademy

You will learn page set-up, saving files, selecting text, deleting text, copy/paste, formatting, using rulers, using tabs, draw tools, spell checker, page preview, printing, fine tuning, headers/footers, title pages, and multiple documents. $$

The LEARN PC Video Series Wordperfect 5.1

Regents/Prentice Hall

Videotapes clearly guide students step by step through each software package. Each video is divided into lessons that contain a series of easy-to-follow, hands-on procedures.The LEARN PC Video Series: Computer Literacy. $$

The Video Basics of Word Processing

Teaching Aids Inc.

This video introduces the basic skills and key terms associated with the processing of words by computers. Exploring the many applications and services that word processing performs, this video presents numerous on-screen examples with follow along dialogue from real world settings. $$$$

WordPerfect

Teaching Aids Inc.

Shows you how to use easy help menus and features; special keyboard functions; create and save documents; how to edit, delete, and insert text; move around in a sample document; work through step by step examples. $

WordPerfect 5.1

Teaching Aids Inc.

Shows you how to use easy help menus and features; special keyboard functions; create and save documents; how to edit, delete, and insert text; move around in a sample document; work through step by step examples. $

WordPerfect: Video 1

MacAcademy

You will learn menus and commands, text manipulations, entering, selecting, deleting, document formatting, spelling checker, using the thesaurus, headline formatting, tab types and uses, importing graphics, and automatic page numbering. $$

WordPerfect: Video 2

MacAcademy

You will learn: formatting columns, footnotes and endnotes, headers and footers, table of contents, preparing indexes, outline preparation, using macros, mail merges, custom templates. $$

WordStar

Teaching Aids Inc.

Shows you how to use easy help menus and features; special keyboard functions; create and save documents; how to edit, delete, and insert text; move around in a sample document; work through step-by-step examples. $

Software—MSDOS, Macintosh, Apple

Advanced WordPerfect 5.0-5.1: Tutorial and Applications, Including Desktop Publishing

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AppleWorks 3.0: Learning Through Applications
Deborah Wendt
Glencoe

Uses a learn-by-doing approach that interweaves the teaching of program features with continuous practice exercises. This refreshing approach focuses on the latest release of the most popular integrated software package for the Apple II family of computers. $ AP

AppleWorks - Integrated Applications for Microcomputers
Clayton and Park
South-Western

Designed for high school and postsecondary students, this text workbook introduces students to AppleWorks and can supplement various manuals and materials available from the CLARIS Corporation. $$ AP

Application Using The Personal Computer
Groneman and Owen-Jaderstrom
South-Western

Offers a wide variety of business applications for students who have some proficiency with applications software programs. $$ MS, AP

Certify! Computer-Based Training Reporting System
Teaching Aids Inc.

A powerful testing tool that helps you evaluate the ability of nearly all PC users. With Certify! it is quick and easy to do. Students will be led through a test of their skills on the software they need to know. It provides an accurate simulation of the actual software being tested. $$$$$ MS

Computer Explorations for Business
Goldman and Furjanic
Glencoe

Helps acquaint students with the functions of integrated, computerized business tools. In simulated job settings, students manipulate data using a simplified word processor, database, spreadsheet, and graphics tool. A telecommunications tool is simulated. Sophisticated equipment is not needed. $$$$$ MS, AP

Dallas Oil, Inc., An Administrative Secretary Simulation, 2nd Edition
Dickinson
South-Western

Students will learn about corporate structure and will gain a better understanding of how big business operates. Students will be given specific tasks to complete and will be guided by the procedures manual, which includes a glossary of corporate and oil terms. Completion time: 20 hrs.
$ MS, AP

DisplayWrite 4: A Practical Approach
Woo and Troop
South-Western

With the help of this practical text workbook, even students with little or no word processing background will find IBM's DisplayWrite 4 easy to understand and use. Completion time: 30-40 hrs. $$ MS

Editing Applications for Word Processing
VanHuss and Matthews
South-Western

This intensive, activity-oriented text workbook takes a generic, conceptual approach—first to review basic word processing functions, then to teach advanced word processing concepts and functions. Composing at the keyboard and working from script and rough-draft copy and forms, students encounter realistic business documents. Completion time: 25-30 hrs. $$ MS, AP

Learning to Use AppleWorks
Kelly
South-Western

In 15 easy-to-learn lessons, this full-color introductory text develops your students' understanding of this software. This publication encourages student participation and involvement. $$ AP

Learning to Use Microsoft Works, IBM Version
Price
South-Western

This full-color introductory text develops students' understanding of Microsoft Works. $$ MS

Mactivities: Learning to Use the Macintosh Computer
Auvil
South-Western

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Mastering WordPerfect 5.1
Mary Campbell
Glencoe

Uses a mastery approach to teach WordPerfect Releases 5.0/5.1. Lessons are brief, each focusing on a single learning objective. As students achieve each objective, they master a new skill. Each new skill introduced builds upon the last skill mastered. $ MS

Microsoft Works: Tutorial and Applications IBM Version, Macintosh Version
South-Western

For use with either Version 1.05 or 2.0, this text workbook emphasizes the features of Microsoft Works most frequently used in business. It offers instruction and applications for word processing, database, spreadsheet, communications, and integration in a simple-to-complex approach. $$ MS

Microtools: Integrated Software for Word Processing, Spreadsheet, and Database, V. 2.0
Allen and Klooster
South-Western

Designed for educational use, includes word processing, database, and spreadsheet programs—plus graphing capabilities. $$$ MS, MAC, AP

PC Power: Microcomputer Applications
Klemin and Harsha
Glencoe

A text-software program that supports a broad-based course in microcomputer concepts and applications. It provides students with the most complete hands-on PC training.
$ MS, MAC, AP

Skill Building Word Processing Exercises
Patricia A. Custer
Regents/Prentice Hall

Text is correlated with the updated 50 topics in Dennis P. Curtin's "Word and Information Processing on Microcomputers Series." It applies skills to a variety of documents.
$ MS

Wall Street Office Systems: A Microcomputer Simulation

Olinzock, Santos, and Sharp — South-Western

This is the first office procedures simulation to cover all major electronic office systems: word processing; databases; spreadsheets; daily planner/calendar; a public database similar to CompuServe; electronic mail; and disk utilities. $$$ MS

Word Processing Applications and Exercises, 2nd Edition

Sandra Muehlman-Shortt — Regents/Prentice Hall

Text correlated with the updated 50 topics in Dennis P. Curtin's Word and Information Processing on Microcomputers Series. $ MS

Word Procesing Tests on Diskette—

AppleWorks PRO DOS
DisplayWrite 4
Microsoft Works
MultiMate
Professional Write
Word Perfect
WordStar 6.0

Dictation Disc Company

Evaluation tests letters on disks. Each test covers two to three functions to pinpoint deficiencies and key in on those functions that require remedial work. The tests are sequential and cumulative. They tell you the competency level of each student. Each test is given a point scale and time frame. Tests may be used with any book. $$ each MS

WordPerfect 5.1 Quick Course

Eisch — South-Western

This easy-to-use text-workbook covers all the necessary functions of WordPerfect 5.1 in a quick 12-15 hours of instruction. $$ MS

WordPerfect 5.0/5.1: Tutorial and Applications, IBM Version

Eisch — South-Western

This practical text-workbook makes students proficient users of the 5.0 and 5.1 versions of the WordPerfect word processing package. Taking a conversational approach, it presents information in a logical step-by-step manner. Completion time: 30 hrs. $ MS

WordPerfect for the Macintosh: Tutorial and Applications

Eisch — South-Western

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WordPerfect Made Perfectly Easy, 2nd Edition

Sharon Anne Fisher-Larson — Glencoe

Task oriented, eliminating extraneous theory and reading. Focuses on the tasks required by office personnel working with WordPerfect 5.1. Text comes with either a 5.25" or 3.5" disk. Clip art is included where the learner will perform those tasks that simulate the desktop publishing environment. $

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WordStar Release 5.0 and 5.5: Tutorials and Applications, IBM Version

Graham — South-Western

This practical text workbook presents the software in an easy-to-follow, step-by-step manner. It leads students from simple to complex functions. Completion time: 30-35 hrs. $$ MS

Working Your Way Through WordStar Release 4, 2nd Edition

Graham — South-Western

The word processing program is presented in a nontechnical, step-by-step style. Each lesson contains specific objectives, command instructions, recaps of commands, and both written and computer exercises. Completion time: 30-35 hrs. $$ MS

Simulations

Contemporary Personnel: A Word Processing Simulation

Linda Mallinson — Regents/Prentice Hall

This complete word processing simulation package sharpens students' word processing skills and places them in a variety of real-world jobs. It ties together their abilities to think. $

Educational Resource Center— An Authentic Rough Draft Simulation

Briggaman — South-Western

Students acquire realistic, meaningful keyboarding and office experience as they develop critical-thinking, decision-making, and problem-solving skills. $

Encore Talent Agency II: A Keyboarding Simulation

McIntosh and Welter — South-Western

Designed for advanced keyboarding students. As typists for a booking agency for models and actors/actresses, students perform 25 challenging and comprehensive jobs dealing with letters, memos, announcements, teleconference schedules, and miscellaneous forms. $

Relay—Information Management Workflow

Boche and BeMent — South-Western

Uses microcomputers to help students gain a real-world understanding of both the importance of each person's job in business and how all jobs interrelate. Students participate in an orientation and training program for their respective jobs. $$$$$$

Student Activities Assistant— A Keyboarding Simulation

Kushner — South-Western

Provides junior high/middle school students with opportunities to apply their basic keyboarding skills. $

Suncoast Civic Center: An Office Assistant Simulation, 3rd Edition

Taylor, Sanchez, and Ransbottom South-Western

Helps students make the transition from completing textbook assignments to performing office duties. By following general instructions and sample documents, students learn to work on their own, prioritize tasks, and develop decision-making skills. Completion time: 20-25 hrs. $

T-Shirt Factory II, A Keyboarding Simulation

Clayton South-Western

Designed for use after the first semester of first-year keyboarding. This simulation allows students to progress at their own rate through 15 realistic activities designed to enhance their keyboarding skills. Students work through a variety of jobs. $

Wheels for Sale: A Computer Applications Simulation

Boyce and Boyce South-Western

Have fun completing 12 information-processing projects and learning about the uses of computers in real life. Updated to keep pace with the newest features in popular commercial software packages and presented in a simple-to-complex order, the projects cover word processing, database, mail merge, spreadsheets, electronic mail/ telecommunications, graphing, integrated software, and desktop publishing. $$

William Wright, Candidate: A WordPerfect Simulation

Ambrose South-Western

Students use WordPerfect to prepare name/address files, letters, outlines, schedules, forms, news releases, telephone scripts, flyers, and tables. This simulation reinforces document processing and formatting skills, WordPerfect software functions, and basic skills such as composition, math, decision making, and use of reference sources. $$$

Other

Automated Office—Filmstrips and Cassettes

Fosbury South-Western

This series has been developed for use in any office education class. The set provides students with a visual impression of the various types of equipment used in the automated office. Vol. 1 and 2, each $$$$$$

Basic Skills in Word Processing: The Universal Approach

Universal Training Systems Co. South-Western

This will help students develop competencies in basic text entry, locate, format, and edit operations on any word processing system. Completion time: 25-30 hrs. $$$$$$ filmstrips

Letterheads and Forms for Use in Typewriting, Transcriptions, and Office Procedures

South-Western

The letterheads and forms in this versatile package may be used in typewriting, word processing, or office procedures classes. $

Q&A QueCards

Que Development Group Que

Convenient flip-card format provides information at a glance. Complete directions for Q&A's word processing, report creation, and printing capabilities. $

Skills for the Electronic World—Reach a Little Higher

South-Western

Features 15 diverse stories about well-known individuals who have achieved success. $$ Audiocassettes

The Proofreader Card

Jones South-Western

This sturdy 6" x 4" card helps develop accurate proofreading skills as students use it to proceed line by line through copy. The back side of the card provides a list and examples of proofreader's marks. Another list shows hyphenation for special words. $

Transparencies for

AppleWorks, Version 2
Display Write 4
Microsoft Works
Professional Write
WordPerfect 4.2
WordPerfect 5.0
WordPerfect 5.1
WordStar 6.0

Dictation Disc Company

Transparencies illustrate what you are describing so your students can see what you are telling them to do. This saves valuable time. The transparencies enable each function to be taught more rapidly by pointing to illustrations. $$$$-$$$$$$

Transparencies for Increasing Your Productivity Series

Haiduk, Laby, Ross, and Shuman Glencoe

Fifty transparencies illustrate key concepts of WordPerfect 5.1; Lotus 1-2-3, Release 2.2; dBase III Plus; and DOS, as presented in the "Increasing Your Productivity Series." $$$$

Database

Reference Books

1-2-3 Database Techniques
Andersen and Weil — Que

Complete introduction to efficient 1-2-3 database design! Helps users create complex database applications. Features dozens of helpful application tips for professional results. $$

10 Minute Guide to Q&A
Sams

Explains essential word processing and database operation in 15 to 20 quick exercises. Exploring merge functions and intelligent assistant operations, each exercise establishes a goal then offers a tutorial to complete that goal in 10 minutes or less. $

dBASE III Plus Handbook, 2nd Edition
George T. Chou — Que

Easy-to-understand resource. Includes command reference. $

dBASE IV 1.1 QuickStart
Que Development Group — Que

Popular Quick Start format takes the intimidation out of learning dBASE IV. Shows readers how to design and build a database with ease. $$

dBASE IV Programming Techniques
W. Edward Tiley — Que

Features Command Summary and provides detailed information on the ReportWriter and the Applications Generator $$

dBASE IV Quick Reference
Que Development Group — Que

The ready-resource for commonly-used dBASE commands. Features quick and easy-to-find answers and listings. $

dBASE IV Version 1.1 for the First Time User
Howard Dickler, Ph.D. — Sams

Written for flat-file and relational database users who are ready to learn dBASE IV 1.1, this book advances step-by-step through the process of developing a complete database management system. The text covers the basics of dBASE IV. $

Everyman's Database Primer Featuring dBASE IV Version 1.1
Byers and Prague — Sams

This book provides a thorough explanation of dBASE IV 1.1 software and database management concepts. Easy-to-understand text, program examples, and over 200 sample dBASE IV 1.1 screens combine to make this book the ideal introduction to dBASE. $

Lotus 1-2-3 Quick Reference Guide
Dennis P. Curtin — Regents/Prentice Hall

A brief, inexpensive keystroke reference guide for beginning through advanced software features. $

Q&A In Business
David B. Adams — Sams

This complete book/disk set is packed with clear, concise instruction and ready-to-use business templates to make the Q&A database and word processing user more productive. $$

Quick Reference Guides
- ***AppleWorks, Ver. 2***
- ***AppleWorks, Ver. 3***
- ***dBase III Plus***
- ***dBase IV***
- ***Microsoft Works***

Dictation Disc Company

These software specific Quick Reference Guides are correlated to the book. Your students follow the illustrated instructions which virtually put their fingers on the correct keys. $ each

Software Solutions: Concepts and Applications
Burton and Shelton — Houghton Mifflin

A four-in-one course. Software Solutions gives students a concise introduction to basic microcomputer concepts, then provides intensive training on MS-DOS, WordPerfect 5.1, Lotus 1-2-3 Release 2.2, and dBASE III Plus. $$

The Best Book of FoxPro
Celeste Robinson — Sams

A comprehensive tutorial and reference for this powerful, user-friendly database management system. Designed for users of both FoxBase and FoxPro, the text covers everything users need to make databases run smoothly. Packed with tips and techniques that make learning FoxPro quick and effective. $

The Best Book of PFS: First Choice
Joseph Wikert — Sams

Provides in-depth coverage on all facets of the latest release of this powerful integrated software. Written for novice computer users and business users at all levels, it offers numerous illustrations, practical applications, and pragmatic tips. $

The Best Book of Professional Write and File
Wolf and Kraynak — Sams

Newcomers to word processing and database management will discover the many features of these two powerful programs. Through complete examples and practical applications, this book shows how easy these programs are to understand and use. $

The First Book of dBASE IV 1.1
Steven Currie — Sams

Quick Steps, Quick References, and helpful illustrations ensure beginning users of effective database results. This First Book introduces the features and functions of dBASE IV Version 1.1. $

The First Book of Microsoft Works for the PC
Debbie Walkowski Sams
Step-by-step information brings beginners quickly up to speed with Microsoft Works. Quick Steps tutorials take readers through Works' word processing, spreadsheet, database, graphics, and communications systems. Focuses on each module separately and presents performance tips for integrating them. $

The First Book of Paradox 3.5
Jonathan Kamin Sams
Readers get the first word on Borland's latest update to its popular database management program. Written as an introductory tutorial for the nontechnical, business-oriented computer user, it focuses on the development of a client/inventory/transaction database. $

The First Book of Q&A
Sandra Schnyder Sams
This book provides the novice computer user with a once over lightly treatment of this popular database. Teaches the fundamentals of installing and using this software. $

Thomason Learning Series
Annette J. Thomason Houghton Mifflin
Texts in series: New Learning Lotus 1-2-3, Release 2.2 with coverage of Release 2.3; Learning WordPerfect 4.2; Learning WordPerfect 5.0; Learning WordPerfect 5.1; Learning Lotus 1-2-3; and Learning dBase III Plus. $

Using dBASE IV
Que Development Group Que
Broadest and best dBASE IV instruction available. Features Command Chart, Functions Reference, and SQL coverage with highlights tips, notes, and examples. $

Texts

Applications for Microcomputer Software
Janet R. Wilson Regents/Prentice Hall
With challenging projects and case studies—for beginning through advanced word processing, spreadsheet, or database users—this volume can be used with any software and enhances students' problem-solving abilities using the microcomputer. $

Computer Explorations for Business
Goldman and Whitney Furjanic Glencoe
Helps acquaint students with the functions of integrated, computerized business tools. In simulated job settings, students manipulate data using a simplified word processor, database, spreadsheet, and graphics tool. A telecommunications tool is simulated. Sophisticated equipment is not needed. $$$$$

DBase III Plus Beginning Course
CIMC
Includes database concepts, using the dBASE III Plus assistant, creating a database, adding data to a database file, modifying data in a database file, report and mailing label preparation, memory variables, operations, and functions, sorting and indexing files, data entry forms. $

dBase III Plus Procedures Manual
Dennis P. Curtin Regents/Prentice Hall
$

dBase III Plus: A Short Course
Dennis P. Curtin Regents/Prentice Hall
$

dBase IV: A Short Course
Dennis P. Curtin Regents/Prentice Hall
$

Increasing Your Productivity with dBase III Plus
James Shuman Glencoe
Programming and applications development. Dot Prompt. The Assist Program. These topics can be overwhelming to a novice computer user. That's why our comprehensive dBase III Plus tutorial takes your students through the process, step-by-step with hands on experience and using the student data disk. $

Information Processing: Concepts and Applications
Dennis P. Curtin Regents/Prentice Hall
This brief overview introduces students to major core concepts they will encounter in virtually all software packages. Case studies in the Lab Manual on DOS. $

Introduction to dBase IV
J. Robert Buck Regents/Prentice Hall
$

Lotus 1-2-3 Advanced
CIMC
Table of contents includes advanced worksheet and range command skills, advanced copy and move command skills, advanced file and print command skills, table lookup and special functions, and keyboard macros. $

Lotus 1-2-3 Beginning Course
CIMC
Includes getting started with Lotus 1-2-3, moving around the worksheet, typing cell entries, using 1-2-3 commands, indicating cell ranges, building a simple worksheet, building a simple database, building a simple graph, writing formulas, 1-2-3 functions, formatting a worksheet, etc. $$

Lotus 1-2-3 for Beginners, 2nd Edition
Latif-Pembry and Royer Regents/Prentice Hall
Text updates the material to include Lotus 1-2-3 Version 2.2 and provides business applications and illustrations in all chapters. $

Lotus 1-2-3 Procedures Manual
Dennis P. Curtin Regents/Prentice Hall
$

Microcomputer Business Applications and Projects
Busche and Esbensen Regents/Prentice Hall
Text enables readers to become comfortable with four application software areas: database management, word processing, spreadsheets, and business graphics and presents IBM computer-based activities. Contains extensive illustrations throughout. $

PC Power: Microcomputer Applications

Klemin and Harsha — Glencoe

A text-software program that supports a broad-based course in microcomputer concepts and applications. It provides students with the most complete hands-on PC training. $

Text Workbook

101 Database Exercises, 2nd Edition

Jeffrey R. Stewart — Glencoe

Provides realistic practice materials and tests for students who are learning to work with an electronic filing system. The 101 exercises may be used with any database software; however, a tutorial for users of dBASE III Plus and Lotus 1-2-3 is included at the back of the book. $

AppleWorks—Integrated Applications for Microcomputers

Clayton and Park — South-Western

Designed for high school and postsecondary students, this text workbook introduces students to AppleWorks and can supplement various manuals and materials available from the CLARIS Corporation. $$

Application Using The Personal Computer

Groneman and Owen-Jaderstrom — South-Western

Offers a wide variety of business applications for students who have some proficiency with applications software programs. $$

Computer Applications for Business

Iris Blanc — Dictation Disc Company

Introduces students to five computer skills through sequential application materials. The learner proceeds from basic to intermediate level. Introductory course—one-two semesters, word processing, spreadsheets, integration, desktop presentation. $

Database

Iris Blanc — Dictation Disc Company

Generic book that may be used with any software or computer. Text focuses on the most commonly used database functions. Provides realistic applications. $

Database Applications

Drum — South-Western

Supplements any database software package you are currently using to reinforce database management concepts. $

Database Productivity: Exercises and Applications

Paradigm

This generic exercise book provides realistic practice using beginning to intermediate features of database programs. Students learn skills in editing, modifying, sorting, and searching database tables and in creating, building, editing, and printing database reports. $

dBASE IV: Concepts, Exercises, and Applications

Arntson — South-Western

Aims to present database management skills in the simplest, most direct way possible. $

dBASE IV PC Tutor

Que Development Group — Que

Unique on-screen training method from ATI. Perfect software/book tutorial. $$

dBASE III Plus: Concepts, Exercises, and Applications

Arntson — South-Western

Provides a step-by-step walk through database management using dBASE III PLUS software. $

Learning to Use Appleworks

Kelly — South-Western

Develops understanding of AppleWorks—the versatile software program containing word processing, database, spreadsheet, and integrated functions. $$

Learning to Use Microsoft Works, IBM Version

Price — South-Western

Develops understanding of Microsoft Works, IBM Version. Provides instruction for the most widely used microcomputer applications—word processing, database, spreadsheet, charting, and communications. $

Lotus 1-2-3 Tutorial and Applications

Groneman — South-Western

Students quickly become proficient users of Lotus 1-2-3, versions 1.0, 2.0, 2.1, and 2.2, the leading spreadsheet program. Focuses on spreadsheet, database, and graphing applications. $$

Microcomputers: A Practical Approach

Klemin and Harsha — Glencoe

For use in one- or two-semester courses, Microcomputers provides generic applications for spreadsheet, database, graphing, word processing, integrated, and communications software. $

Microcomputer Activities for the Office

Olinzock and Santos — South-Western

The software simulates a package of "bundled" activities that duplicate activities common in today's automated business offices: customer accounts, database management, electronic calculator/notepad, financial decision making, payroll processing, and processing of business forms. $$$

MicroFile II: A Database Filing Program

Fosegan and Horton — South-Western

An easy to learn microcomputer database program designed to introduce students to computer information storage and retrieving information. $$

Microtools: Integrated Software, Macintosh Version

Allen and Klooster — South-Western

The popular integrated software program with this publication guides students through the basics of word processing, spreadsheet, and database programs. The package features instruction to three ranges of activity levels. $

PC-File+ and PC-File: Quick Start, Versions 3.0 and 5.01

South-Western

Offers hands-on tutorial on the basic skills of PC-File+ and PC-File, Versions 3.0 and 5.01. Step-by-step directions are provided for creating, changing, manipulating, and reporting on the records in a database. $$

Quattro Pro: Concepts and Applications
Troop and Craig — South-Western
Designed to train and develop students' skills in using Quattro Pro Versions 2.0 and 3.0 spreadsheet software, including its graphics and database applications. $$

Quick Guide to Database Management
Stewart, Jr., Melesco, and McMinnis — Glencoe
With its coverage of database concepts combined with realistic applications, this practical text workbook meets the evolving needs of instructors and students in microcomputer applications, office procedures, records management, and filing programs. $

Using Computers In Our Society: With AppleWorks
Kelly and Watts — South-Western
Students learn to use the popular AppleWorks software for word processing, database, and spreadsheets as well as mail merge. In addition, they learn simple programming with Apple BASIC. $$

Using dBASE for Database Applications
Drum and Jansen — South-Western
Provides step-by-step instructions for using both dBASE III and dBASE IV. $

Using PFS: First Choice Tutorial and Applications
Drum and Jansen — South-Western
Guides students through PFS: First Choice, the integrated software program that operates as word processor, file manager, spell checker/thesaurus, spreadsheet, graphics generator, and electronic communication to other computers. $$

Software—MS-DOS, Macintosh, Apple

Application Using the Personal Computer
Groneman and Owen-Jaderstrom — South-Western
Offers a wide variety of business applications for students who have some proficiency with applications software programs. $$ MS, AP

Computer Explorations for Business
Goldman, and Furjanic — Glencoe
Helps acquaint students with the functions of integrated, computerized business tools. In simulated job settings, students manipulate data using a simplified word processor, database, spreadsheet, and graphics tool. A telecommunications tool is simulated. Sophisticated equipment is not needed. $$$$$ MS, AP

Database Tests on Diskettes
dBase III & IV
PFS File
AppleWorks
Q & A
Microsoft Works
Dictation Disc Company
Evaluation tests problems on disks. Each test covers two to three functions to pinpoint deficiencies and key in on those functions that require remedial work. The tests are sequential and cumulative, they tell you the competency level of each student. Each test is given a point scale and time frame. Tests may be used with any book. $$ each MS

Filing and Database Systems, 10th Edition
Stewart and Greene — Glencoe
This comprehensive program presents filing rules compatible with the latest ARMA standards. Throughout this edition, greater emphasis is given to database technology and terminology. The program is designed for use in filing, clerical, and secretarial procedures courses. $ MS, AP

Increasing Your Productivity with dBase III PLUS
James Shuman — Glencoe
Programming and applications development. Dot Prompt. The Assist Program. These topics can be overwhelming to a novice computer user. That's why our comprehensive dBase III Plus tutorial takes your students through the process, step-by-step with hands on experience and using the student data disk. $ MS

Lotus 1-2-3 Tutorial and Applications
Groneman — South-Western
Students quickly become proficient users of Lotus 1-2-3, versions 1.0, 2.0, 2.1, and 2.2, the leading spreadsheet program. Focuses on spreadsheet, database, and graphing applications. $$ MS

McGraw-Hill Database
Gregg/McGraw-Hill — Glencoe
Teach database management applications or perform simple administrative tasks. Offers a sort function to reorder the database in ascending or descending order on a field chosen by the user, and a get function which searches the database and pulls out records that match a pattern specified by user. $ MS, AP

Microcomputers: A Practical Approach
Klemin and Harsha — Glencoe
For use in one- or two-semester courses, Microcomputers provides generic applications for spreadsheet, database, graphing, word processing, integrated, and communications software. $ MS, AP

Microcomputer Activities for the Office
Olinzock and Santos — South-Western
The software simulates a package of "bundled" activities that duplicate activities common in today's automated business offices: customer accounts, database management, electronic calculator/notepad, financial decision making, payroll processing, and processing of business forms. $$$ MS, AP

Microcomputer Business Applications and Projects
Busche and Esbensen — Regents/Prentice Hall
Text enables readers to become comfortable with four application software areas: database management, word processing, spreadsheets, and business graphics and presents IBM computer-based activities; contains extensive illustrations throughout. $ MS

MicroFile II: A Database Filing Program
Fosegan and Horton — South-Western
An easy to learn microcomputer database program designed to introduce students to computer information storage and retrieving information. $$ MS, AP

Microsoft Works: Tutorial and Applications IBM Version, Macintosh Version
South-Western

For use with either Version 1.05 or 2.0, this text-workbook emphasizes the features of Microsoft Works most frequently used in business. It offers instruction and applications for word processing, database, spreadsheet, communications, and integration in a simple-to-complex approach. $$ MS

Microtools: Integrated Software for Word Processing, Spreadsheet, and Database, Version 2.0
Allen and Klooster South-Western

Designed for educational use, includes word processing, database, and spreadsheet programs—plus graphing capabilities. $$$ MS, MAC, AP

PC Power: Microcomputer Applications
Klemin and Harsha Glencoe

A text-software program that supports a broad-based course in microcomputer concepts and applications. It provides students with the most complete hands-on PC training. $ MS, MAC

Power Training From ATI
Teaching Aids Inc.

Teach yourself to use dBASE III Plus, dBase IV, Display Write 4, DOS 3.3, DOS 4.0, Louts 1-2-3 (2.2), MicroSoft Word (5.0), MultiMate Adv. II, OS/2, PC Tools, PageMaker, SuperCalc 5, Windows 3, WordPerfect (5.0), WordPerfect (5.0) Adv., WordPerfect (5.1), PC/AT, PC/XT, and PS/2. $$$ MS

Seasons Travel and Tours: Office Activities for Integrated Soft
Cheryl Luke Glencoe

Hands-on training builds students' ability to use the most popular commercial integrated software packages while performing realistic office tasks. Flexible 15- to 20-hour simulation makes a travel agency the motivating setting for activities using word processing, database, and spreadsheets. $ MS

Using Computers In Our Society: With AppleWorks
Kelly and Watts South-Western

Students learn to use the popular AppleWorks software for word processing, database, and spreadsheets, as well as mail merge. In addition, they learn simple programming with Apple BASIC. $$ AP

Using PFS: First Choice Tutorial and Applications
Drum and Jansen South-Western

Guides students through PFS: First Choice, the integrated software program that operates as word processor, file manager, spell checker/thesaurus, spreadsheet, graphics generator, and electronic communication to other computers. $$ MS

Simulations

Sails for Rent: An Information Management Simulation
Boyce and Boyce South-Western

Go beyond merely processing information to managing information. Making decisions, creating documents, originating databases and spreadsheets, and designing forms are some of the skills students will acquire as employees training in a multi-divisional recreation company based in the Hawaiian Islands. $$

Seasons Travel and Tours: Office Activities for Integrated Software
Cheryl Luke Glencoe

Hands-on training builds students' ability to use the most popular commercial integrated software packages while performing realistic office tasks. Flexible 15- to 20-hour simulation makes a travel agency the motivating setting for activities using word processing, database, and spreadsheets. $

T.H.E. Total Health Experience: A Microcomputer Applications Practice Set
Holmes, Eide, and Klemin Glencoe

Set in a health and fitness club—integrates the teaching of four types of microcomputer applications: word processing, spreadsheet, database, and graphics. Students practice selecting appropriate software, prioritizing tasks, and doing disk and file maintenance. $$$$

Wall Street Office Systems: A Microcomputer Simulation
Olinzock, Santos, and Sharp South-Western

This is the first office procedures simulation to cover all major electronic office systems: word processing; databases; spreadsheets; daily planner/calendar; a public database similar to CompuServe; electronic mail; and disk utilities. $$$

Wheels for Sale: A Computer Applications Simulation
Boyce and Boyce South-Western

Have fun completing 12 information-processing projects and learning about the uses of computers in real life. Updated to keep pace with the newest features in popular commercial software packages and presented in a simple-to-complex order, the projects cover word processing, database, mail merge, spreadsheets, electronic mail/telecommunications, graphing, integrated software, and desktop publishing. $$

Worldwide Publishing, Inc.: An Information Processing and Computer Simulation
Fruehling and Weaver EMC Publishing

Set in an electronic office, this simulation gives students an opportunity to work for different departments using microcomputer applications. Students work with database, spreadsheet, graphics, word processing, and integrated software applications to practice solving business problems. $

Reference Books

1-2-3 Graphics Techniques
Steve Sagman Que
The most effective methods for spreadsheet graphics and analysis! Features tips and techniques for high-quality graphs and other presentation material and packed with examples and illustrations. $

1-2-3 Release 2.2 PC Tutor
Que Development Group Que
The quick-learning guide to 1-2-3 spreadsheets! Complete with tutorial disk, book lessons, and hands-on exercises. Shows reader how to create worksheets, graphs, databases, and print reports. $$

1-2-3 Release 2.2 QueCards
Que Development Group Que
Perfect for those who use 1-2-3 applications daily! Has 60 quick reference cards to essential 1-2-3 commands and a spiral bound format with a built-in easel. $

1-2-3 Release 2.2 Quick Reference
Que Development Group Que
Easy-to-use format includes alphabetical task and command listings. Procedures and effective user tips are provided for each listing. $

1-2-3 Release 3.1 Quick Reference
Que Development Group Que
Compact pocket reference to vital 1-2-3 commands. Alphabetical listings make information easy to find. $

1-2-3 Release 3.1 QuickStart, 2nd Edition
Que Development Group Que
Illustrated, step-by-step guide to Release 3.1 worksheets! Unique visual approach provides instant productivity. Quick advice on great spreadsheet, database, and graphic applications. $

10 Minute Guide to Quattro Pro
Gloria Wheeler Sams
New spreadsheet users now have a quick, efficient guide to productivity with this 10 Minute Guide. Quattro Pro essentials are covered, including entering and editing data, writing formulas, and creating graphs and charts. A series of 25 short lessons explains each function and procedure. $

Lotus 1-2-3 Bible
Simpson and Burns Sams
A comprehensive collection of power tips and techniques for this standard-setting spreadsheet package. Covering Releases 2.3 and 3.1, the book presents an overview of basic procedures—complemented by lots of practical examples, illustrations, and icons highlighted to the latest enhancements. $$

Lotus 1-2-3 in Business
Michael Griffin Sams
A valuable time-saving worksheet resource. Concise, "at-a-glance" instructions at the beginning of each chapter offer quick help to the new user. $$

Lotus 1-2-3: Step-by-Step, Version 2.2
Judd Robbins Sams
This comprehensive guide covers all features, including formulas, functions, macros, templates, and large worksheets. Useful for classroom text or self-training, the book offers margin notes and end-of-chapter reviews for quick and easy database management. $

Quattro Pro Quick Reference
Que Development Group Que
Easy-to-use format includes alphabetical task and command listings. Procedures and effective user tips are provided for each listing. $

Quattro Pro 3 QuickStart
Que Development Group Que
Que's easy-learning, visual approach to Quattro Pro spreadsheets! The best combination of step-by-step instruction, examples, and graphics. Covers everything from home budgeting to economic forecasting. $

Quick Reference Guides
AppleWorks, Ver. 2
AppleWorks, Ver. 3
Lotus 1-2-3 Intro.
Lotus 1-2-3 Ver. 2.2
Microsoft Works
Quattro Pro
Dictation Disc Company
These software specific Quick Reference Guides are correlated to the book. Your students follow the illustrated instructions which virtually put their fingers on the correct keys. $

Software Solutions: Concepts and Applications
Burton and Shelton Houghton Mifflin
A tour-in-one course. Software Solutions gives students a concise introduction to basic microcomputer concepts, then provides intensive training on MS-DOS, WordPerfect 5.1, Lotus 1-2-3 Release 2.2, and dBASE III Plus. $$

The Best Book of Lotus 1-2-3: New Edition
Alan Simpson Sams
This comprehensive tutorial and reference guides beginning and experienced 1-2-3 users through all the features of the program. Hands-on exercises, sample worksheets, and numerous screen illustrations bolster an excellent learning tool. $$

The First Book of Excel 3 for the Mac
Christopher Van Buren Sams
This essential introduction is a solid formula for spreadsheet success. Step-by-step lessons to critical functions explore ways to formulate spreadsheets and create professional reports. Users also learn to apply practical business tips and techniques. $

The First Book of Lotus 1-2-3/G

Peter Aitken Sams

An ideal beginner's guide to 1-2-3/G! This book gives users an introductory look at the new graphic version of 1-2-3 and the Presentation Manager user interface. Leads users easily from installation to personal productivity. $

The First Book of Lotus 1-2-3: New Edition

Simpson and Lichtman Sams

Beginners get a unique approach to learning the latest version of 1-2-3 with this book. Step-by-step instruction guides users through 1-2-3 worksheet and database capabilities. Focusing on quick and easy business application, this book shows users how to master all the new features. $

The First Book of LotusWorks

Sams

An excellent beginner's guide to this broad-based and practical integrated software. Quick Steps lessons and a Quick Command Reference are included to provide the quickest, most efficient learning possible. Coverage includes spreadsheet, graphics, word processing and communications. $

The First Book of Microsoft Works for the PC

Debbie Walkowski Sams

Step-by-step information brings beginners quickly up to speed with Microsoft Works. Quick Steps tutorials take readers through Works' word processing, spreadsheet, database, graphics, and communications systems. Focuses on each module separately and presents performance tips for integrating them. $

The First Book of Quattro Pro 3

Patrick Burns Sams

Completely updated to cover the latest release, this book takes readers step-by-step through Quattro Pro's fundamentals and procedures. Users learn how to design and build effective spreadsheets and add in dynamic graphic features without fuss. $

The First Book of the Mac

Rose and Rose Sams

Here's the first word on the Macintosh, complete with all essential Mac information! Performance tips and techniques make sure Mac beginners get started quickly—and coverage of desktop publishing, spreadsheet, word processing, and HyperCard capabilities make them productive. $

Thomason Learning Series

Annette J. Thomason Houghton Mifflin

Texts in series: New Learning Lotus 1-2-3, Release 2.2 with coverage of Release 2.3; Learning WordPerfect 4.2; Learning WordPerfect 5.0; Learning WordPerfect 5.1; Learning Lotus 1-2-3; and Learning dBase III Plus. $

Using 1-2-3 Release 2.2, Special Edition

Que Development Group Que

The all-time best-selling personal computer book—from the 1-2-3 experts at Que! Easy to follow format features numerous illustrations and examples. Includes Allways coverage, a troubleshooting section, and a complete command reference. $$

Texts

Applications for Microcomputer Software

Janet R. Wilson Regents/Prentice Hall

With challenging projects and case studies—for beginning through advanced word processing, spreadsheet, or database users—this volume can be used with any software and enhances students' problem-solving abilities using the microcomputer. $

Computer Explorations for Business

Goldman and Furjanic Glencoe

Helps acquaint students with the functions of integrated, computerized business tools. In simulated job settings, students manipulate data using a simplified word processor, database, spreadsheet, and graphics tool. A telecommunications tool is simulated. Sophisticated equipment is not needed. $$$$$

Increasing Your Productivity with Lotus 1-2-3 Release 2.2

Paul Ross Glencoe

With this comprehensive tutorial program, your students learn Lotus 1-2-3, the leading spreadsheet package, by actually working through it, step-by-step. Through the use of the Student Data Disk, students master steps in a logical progression. $

Microcomputer Business Applications and Projects

Busche and Esbensen Regents/Prentice Hall

Text enables readers to become comfortable with four application software areas: database management, word processing, spreadsheets, business graphics and presents IBM computer-based activities. Contains extensive illustrations throughout. $

PC Power: Microcomputer Applications

Klemin and Harsha Glencoe

A text-software program that supports a broad-based course in microcomputer concepts and applications. It provides students with the most complete hands-on PC training. $

Using 1-2-3 Release 3.1, 2nd Edition

Que Development Group Que

The comprehensive resource for Release 3.1 from Que's world-recognized team of 1-2-3 experts! Features easy-to-read text and tutorials introducing worksheet basics, detailed coverage of advanced features—including multiple worksheet and file applications. $$

Using Quattro Pro

Patrick Burns Que

The complete, easy-to-use introduction to Quattro Pro! Includes Quick Start tutorials plus lasting reference material. Includes macro commands, review sections, tips, and a command chart. $

Text Workbooks

101 Advanced Spreadsheet Exercises: Using Lotus 1-2-3, VP Planner
Lloyd D. Brooks — Glencoe

Consists of 101 short applications that are organized in conceptually related clusters. It contains enough conceptual material to aid students' understanding but focus mainly on the steps required to learn advanced spreadsheet functions. $

101 Spreadsheet Exercises, 2nd Edition
Lloyd D. Brooks — Glencoe

These exercises provide practice in any course where spreadsheets are used. As a 15-30 hour program of brief exercises, this program teaches most of the important spreadsheet functions, including keyboarding, editing, file management, formatting, replication, and formula creation. $

AppleWorks—Integrated Applications for Microcomputers
Clayton and Park — South-Western

Designed for high school and postsecondary students, this text-workbook introduces students to AppleWorks and can supplement various manuals and materials available from the CLARIS Corporation. $$

Computer Applications for Business
Iris Blanc — Dictation Disc Company

Introduces students to five computer skills through sequential application materials. The learner proceeds from basic to intermediate level. Introductory course—one-two semesters, word processing, spreadsheets, integration, desktop presentation. $

Electronic Spreadsheet Applications in Practice
Close — South-Western

Provides generic spreadsheet application exercises for students who know how to use spreadsheet software. $

Learning to Use Appleworks
Kelly — South-Western

Develops understanding of AppleWorks—the versatile software program containing word processing, database, spreadsheet, and integrated functions. $$

Lotus 1-2-3 Tutorial and Applications
Groneman — South-Western

Students quickly become proficient users of Lotus 1-2-3, versions 1.0, 2.0, 2.1, and 2.2, the leading spreadsheet program. Focuses on spreadsheet, database, and graphing applications. $

Microcomputer Activities for the Office
Olinzock and Santos — South-Western

The software simulates a package of "bundled" activities that duplicate activities common in today's automated business offices: customer accounts, database management, electronic calculator/notepad, financial decision making, payroll processing, and processing of business forms. $$$

Microcomputers: A Practical Approach
Klemin and Harsha — Glencoe

For use in one- or two-semester courses, Microcomputers provides generic applications for spreadsheet, database, graphing, word processing, integrated, and communications software. $

Microtools: Integrated Software, Macintosh Version
Allen and Klooster — South-Western

The popular integrated software program with this publication guides students through the basics of word processing, spreadsheet, and database programs. The package features instructions to three ranges of activity levels. $

Microtools: Integrated Software for Word Processing, Spreadsheet, and Database, V. 2.0
Allen and Klooster — South-Western

Version 2.0 contains the same convenient features as the original but now adds graphing capabilities. This new graphic component is easy to learn and easy to use. After entering the data to be graphed, students can produce three types of charts: bar, stacked bar, and point. They can even import graphs into their word processing documents. $

Quattro Pro: Concepts and Applications
Troop and Craig — South-Western

Designed to train and develop students' skills in using Quattro Pro Versions 2.0 and 3.0 spreadsheet software, including its graphics and database applications. $

Spreadsheet Productivity: Exercises and Applications
Joseph C. Otto, Ed.D. — Paradigm

This generic exercise book provides realistic practice using beginning to intermediate features of spreadsheet programs. Students learn how to manipulate basic business spreadsheets and solve business problems. The entire workbook provides 30-45 hours of practice. $

Spreadsheets—Skill Building Exercises and Applications
Blanc and Vento — Dictation Disc Company

All students in a computer applications course. The book contains 100 exercises in twelve lessons. The instructions are clearly presented to show the student how input should appear on their screen. The exercises are sequential and cumulative. $

Using Computers in our Society: With AppleWorks
Kelly and Watts — South-Western

Students learn to use the popular AppleWorks software for word processing, database, and spreadsheets, as well as mail merge. In addition, they learn simple programming with Apple BASIC. $

Using PFS: First Choice Tutorial and Applications
Drum and Jansen — South-Western

Guides students through PFS: First Choice, the integrated software program that operates as word processor, file manager, spell checker/thesaurus, spreadsheet, graphics generator, and electronic communication to other computers. $$

Videos

Lotus 1-2-3

Teaching Aids Inc.

Shows you how to set up a spreadsheet, enter text and value information, use formulas and ranges, edit and format cell entries, erase cells and save spreadsheet, and work through step-by-step examples. $

Lotus 1-2-3 "Graphs"

Teaching Aids Inc.

Shows you how to use the graph feature of Lotus 1-2-3. You will define data ranges, create pie charts, bar charts, and stacked bar charts. The power of graphs explained with easy step by step examples. $

Microsoft Works 2.0: Tape 4: Spreadsheet

MacAcademy

You will learn page set-up, headers/footers, help menus, rows/columns, using menus, cell selection, data entry, formulas, fill right, math functions, fill down, printing, graphs, charts, macros, cell protection, and advanced formulas. $$

Software—MS-DOS, Macintosh, Apple

AppleWorks—Integrated Applications for Microcomputers

Clayton and Park South-Western

Designed for high school and postsecondary students, this text workbook introduces students to AppleWorks and can supplement various manuals and materials available from the CLARIS Corporation. $$ AP

Applications for Your Computer and You

Groneman and Jaderstrom South-Western

Designed for microcomputer applications or computer literacy courses in grades 7-10, this text workbook can be used with virtually any brand of computer. Students can practice the skills they've already learned from computer software tutorials or instruction manuals. $$ MS, MAC, AP

Application Using the Personal Computer

Groneman and Owen-Jaderstrom South-Western

Offers a wide variety of business applications for students who have some proficiency with applications software programs. $$ MS, MAC, AP

Computer Applications and Concepts

Groneman and Jaderstrom South-Western

Gives students hands-on practice completing computer applications involving business, school, and personal situations. $$ MS, MAC, AP

Computer Explorations for Business

Goldman and Furjanic Glencoe

Helps acquaint students with the functions of integrated, computerized business tools. In simulated job settings, students manipulate data using a simplified word processor, database, spreadsheet, and graphics tool. A telecommunications tool is simulated. Sophisticated equipment is not needed. $$$$$ AP

Learning to Use Appleworks

Kelly South-Western

Develops understanding of AppleWorks—the versatile software program containing word processing, database, spreadsheet, and integrated functions. $$ AP

Lotus 1-2-3 Tutorial and Applications

Groneman South-Western

Students quickly become proficient users of Lotus 1-2-3, versions 1.0, 2.0, 2.1, and 2.2, the leading spreadsheet program. Focuses on spreadsheet, database, and graphing applications. $$ MS

McGraw-Hill Spreadsheet

Gregg/McGraw-Hill Glencoe

Teach spreadsheet applications and complete typical business application problems found in textbooks. The spreadsheet, which supports a maximum of 26 columns by 250 rows, depending on cell sizes, is sufficient for almost any educational application. $$$$$$ MS, AP

Microcomputers: A Practical Approach

Klemin and Harsha Glencoe

For use in one- or two-semester courses, Microcomputers provides generic applications for spreadsheet, database, graphing, word processing, integrated, and communications software. $ MS, MAC, AP

Microsoft Works: Tutorial and Applications, IBM Version, Macintosh Version

South-Western

For use with either Version 1.05 or 2.0, this text workbook emphasizes the features of Microsoft Works most frequently used in business. It offers instruction and applications for word processing, database, spreadsheet, communications, and integration in a simple-to-complex approach.

$$ MS, MAC

Microtools: Integrated Software, Macintosh Version

Allen and Klooster South-Western

The popular integrated software program with this publication guides students through the basics of word processing, spreadsheet, and database programs. The package features instructions to three ranges of activity levels.

$$$ MAC

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Allen and Klooster South-Western

Version 2.0 contains the same convenient features as the original but now adds graphing capabilities. This new graphic component is easy to learn and use. After entering the data to be graphed, students can produce three types of charts: bar, stacked bar, and point. They can even import graphs into their word processing documents.

$$$ MS, AP

PC Power: Microcomputer Applications

Klemin and Harsha Glencoe

A text-software program that supports a broad-based course in microcomputer concepts and applications. It provides students with the most complete hands-on PC training.

$ MS, MAC, AP

Quattro Pro: Concepts and Applications

Troop and Craig South-Western

Designed to train and develop students' skills in using Quattro Pro Versions 2.0 and 3.0 spreadsheet software, including its graphics and database applications. $$ MS

Spreadsheets Tests on Diskettes

Lotus 1-2-3
SuperCalc3, Version 1.0 or 2.0
AppleWorks
Excel
Excel for Mac
Microsoft Works

Blanc and Vento Dictation Disc Company

Evaluation tests problems on disks. Each test covers two to three functions to pinpoint deficiencies and key in on those functions that require remedial work. The tests are sequential and cumulative, they tell you the competency level of each student. Each test is given a point scale and time frame. Tests may be used with any book. $$ each MS, MAC

Using PFS: First Choice Tutorial and Applications

Drum and Jansen South-Western

Guides students through PFS: First Choice, the integrated software program that operates as word processor, file manager, spell checker/thesaurus, spreadsheet, graphics generator, and electronic communication to other computers. $$ MS

Simulations

Sails for Rent: An Information Management Simulation

Boyce and Boyce South-Western

Go beyond merely processing information to managing information. Making decisions, creating documents, originating databases and spreadsheets, and designing forms are some of the skills students will acquire as employees training in a multi-divisional recreation company based in the Hawaiian Islands. $$

Seasons Travel and Tours: Office Activities for Integrated Software

Cheryl Luke Glencoe

Hands-on training builds students' ability to use the most popular commercial integrated software packages while performing realistic office tasks. Flexible 15- to 20-hour simulation makes a travel agency the motivating setting for activities using word processing, database, and spreadsheets. $

T.H.E. Total Health Experience: A Microcomputer Applications Practice Set

Holmes, Eide, and Klemin Glencoe

Set in a health and fitness club—integrates the teaching of four types of microcomputer applications: word processing, spreadsheet, database, and graphics. Students practice selecting appropriate software, prioritizing tasks, and doing disk and file maintenance. $$$$

Wall Street Office Systems: A Microcomputer Simulation

Olinzock, Santos, and Sharp South-Western

This is the first office procedures simulation to cover all major electronic office systems: word processing, databases, spreadsheets, daily planner/calendar, a public database similar to CompuServe, electronic mail, disk utilities. $$$

Wheels for Sale: A Computer Applications Simulation

Boyce and Boyce South-Western

Have fun completing 12 information-processing projects and learning about the uses of computers in real life. Updated to keep pace with the newest features in popular commercial software packages and presented in a simple-to-complex order, the projects cover word processing, database, mail merge, spreadsheets, electronic mail/ telecommunications, graphing, integrated software, and desktop publishing. $$

Worldwide Publishing, Inc.: An Information Processing and Computer

Fruehling and Weaver EMC Publishing

Set in an electronic office, this simulation gives students an opportunity to work for different departments using microcomputer applications. Students work with database, spreadsheet, graphics, word processing, and integrated software applications to practice solving business problems. $

Other

Transparencies for Lotus 1-2-3 (Intro.)

Dictation Disc Company

Transparencies illustrate what you are describing so that your students can see what you are telling them to do. This saves valuable time. The transparencies enable each function to be taught more rapidly by pointing to illustrations. $$

Transparencies for Lotus 1-2-3, Version 2.2

Dictation Disc Company

Transparencies illustrate what you are describing so that your students can see what you are telling them to do. This saves valuable time. The transparencies enable each function to be taught more rapidly by pointing to illustrations. $$$$$$

Transparencies for dBase III Plus

Dictation Disc Company

Transparencies illustrate what you are describing so that your students can see what you are telling them to do. This saves valuable time. The transparencies enable each function to be taught more rapidly by pointing to illustrations. $$$$

Transparencies for Increasing Your Productivity Series

Haiduk, Laby, Ross, and Shuman Glencoe

Fifty transparencies illustrate key concepts of WordPerfect 5.1; Lotus 1-2-3, Release 2.2; dBase III Plus; and DOS, as presented in the Increasing Your Productivity Series. $$$$

Desktop Pubishing

Reference Books

Reference Manual for Desktop Publishing Using Wordperfect 5.1

Gehris and Setcavage Dictation Disc Company
$

The First Book of PFS: First Publisher

Brown and Bixby Sams
Readers learn how to design and create letters, forms, and professional-quality publications. Through screen illustrations, command summaries, and the Quick Steps tutorial, users learn page elements, text styles, graphics, page layout, and production techniques. $

The First Book of the Mac

Rose and Rose Sams
Here's the first word on the Macintosh, complete with all essential Mac information! Performance tips and techniques make sure Mac beginners get started quickly—and coverage of desktop publishing, spreadsheet, word processing, and HyperCard capabilities make them productive. $

Using PageMaker: Macintosh Version, 2nd Edition

C. J. Weigand Que
Includes sample templates for newsletters, brochures, catalogs, and reports. Packed with production techniques, design basics, and business examples. $

Using PFS: First Publisher, 2nd Edition

Katherine Murray Que
Updated coverage on word processing basics and layout. Power-packed with program and design tips and Quick Start lessons. $

Using Publish It!

Katherine Murray Que
Combines practical tutorial and reference material. $

WordPerfect 5.1 Quick Reference Guide

Dennis P. Curtin Regents/Prentice Hall
Text demonstrates keystrokes for beginning through advanced program features—an ideal computer-side reference. It is logically organized by applications, not by commands, and presents a succinct and inexpensive guide for all users. $

WordPerfect Bible

Susan Baake-Kelly Sams
This massive collection of WordPerfect power-user tips provides total coverage of all WordPerfect functions. With in-depth emphasis on advanced topics, this book helps users speed up their merge operations, graphics integration, and desktop publishing tasks. $$

WordPerfect Power Pack

Ralph Blodgett Que
Ready-to-run macros and style sheets highlight this great book/disk set. Features timesaving applications for frequently used business tasks and result-oriented tutorials for reports, mail-merge, labels, legal documents, and desktop publishing. $$

Texts

100+ Desktop Publishing Exercises

Helen Youth Regents/Prentice Hall
A practical, generic applications manual—ideal for use with any desktop publishing software—this volume offers over 100 exercises, complete with brief explanations of basic desktop publishing concepts and ample hands-on activities.
$

Basics of Desktop Publishing

Instructional Materials
Introduction to basic desktop publishing, for use with secondary and postsecondary students. Covers terms, hardware and software, type selection, merging graphics, document design, layout, and proofreading. $

Communicating in Business and Industry, 2nd Edition

Thomas W. Comstock Delmar
A concise, how-to presentation of verbal and nonverbal communication skills. Listening, reading, telephone and computer skills, job applications, and body language are addressed. Up-to-date coverage includes: FAX and cellular communications, word processing and desktop publishing, time management, etc. $

Concepts and Applications for the Desktop Publisher: A Brief Course

Arntson and Nordquist South-Western
Includes basic concepts of desktop publishing as well as generic applications. $

Desktop Publishing Using Pagemaker on the IBM-PC Version 4.0

Don Busche Regents/Prentice Hall
Text covers the desktop publishing essentials of design, typography, graphics, and text. It contains step-by-step sample activities in each chapter plus a variety of hands-on drill and practice activities. $

Desktop Publishing Using PageMaker on the Macintosh

Don Busche Regents/Prentice Hall
Text covers the desktop publishing essentials of design, typography, graphics, and text. It contains step-by-step sample activities in each chapter plus a variety of hands-on drill and practice activities. $

Desktop Publishing Using PFS: First Publisher, Version 3.0

Marilyn Thomas Regents/Prentice Hall
Text follows each discussion of a topic with step-by-step keystroke instructions. It provides screen shots that allow readers to compare what is on their own monitors with what should be on their monitors. $

Desktop Publishing with WordPerfect 5.1

Dennis P. Curtin Regents/Prentice Hall
Assuming background in basic word processing procedures (such as entering, editing, and printing), this desktop manual guides students through WordPerfect. $

Desktop Publishing: Producing Professional Publications

Benedict Kruse
Delmar

Using a generic approach, this text discusses the publishing process, manuscript preparation, computer-generated graphics, and setting up a production facility. The latest desktop publishing products are discussed, with pros/cons and the types of situations where they are most appropriate. $$

Hands-On Word for the IBM PC: A Self-Teaching Guide and Reference

Wallia and Hart
Regents/Prentice Hall

From the Prentice Hall "Hands-On Desktop Publishing Series." Text offers a unique, projects-oriented introduction to desktop publishing, presents easy-to-follow keystroke instructions for completing 18 of the most common desktop publishing tasks, integrates over 200 screen illustrations, uses large type, and comes in a convenient plastic comb binding. $

Keyboarding/Information Processing— Supplementary Application

Belis and Dembo
South-Western

Designed to provide instructors with additional supplementary applications for use in keyboarding, word/information processing, desktop publishing, and computer applications courses. $$

Learning Desktop Publishing with Pagemaker, Versions 3.X-4.0

Louis Gioia
Regents/Prentice Hall

Text assumes no prior computing experience; covers desktop publishing concepts thoroughly and concisely. It presents tutorial sections containing hands-on activities, highlighted in bold type and shows students how to function in the Microsoft Windows environment. $

Que's Using Ventura Publisher

Schuyler W. Lininger, Jr.
Que

Quick Start tutorials show readers how to create business cards, newsletters, and longer, more complicated documents. Coverage for all DOS and Windows versions. $$

WordPerfect 5.0: A Complete Course

Dennis P. Curtin
Regents/Prentice Hall

Includes information on the basics, editing and formatting, merge-printing and document assembly, desktop publishing, and special features. $

Text Workbooks

Advanced WordPerfect 5.0-5.1: Tutorial and Applications, Including Desktop Publishing

Sullivan
South-Western

Now students who know WordPerfect basics can learn how to use the advanced features of the world's number one word processing program. This tutorial presents the advanced commands in WordPerfect 5.0 and 5.1 in an easy-to-follow, step-by-step fashion and gives students time-saving tips and techniques. They will also learn how to avoid common problems. $

Computer Applications for Business

Iris Blanc
Dictation Disc Company

Introduces students to five computer skills through sequential application materials. The learner proceeds from basic to intermediate level. Introductory course—one-two semesters, word processing, spreadsheets, integration, desktop presentation. $

Desktop Publishing Applications: Macintosh/PageMaker

Holly Yasui
Paradigm

Hands-on guide to desktop publishing on the Apple Macintosh provides step-by-step instructions for creating business documents on a personal computer. With the use of PageMaker desktop publishing software, learn to prepare individual projects and templates with style sheets for on-going projects. $

Desktop Publishing in the Bag

Barefield
South-Western

This versatile collection of independent exercises provides students with challenging activities and games while they learn to use DTP software. $

Desktop Publishing Basics

Margaret Brown
Dictation Disc Company

Book contains clear and concise explanations of desktop publishing features. Allows the user to develop the skills and confidence needed to create desktop publications. $

Desktop Publishing Productivity: Exercises and Applications

Paradigm

This generic exercise book provides realistic practice in beginning to intermediate desktop publishing. Students learn skills in designing and assembling desktop publishing projects. They also have the opportunity to use graphics in their projects. $

Desktop Publishing Using PageMaker— for Use with IBM, IBM-Compatible, and Macintosh Computers

Brownell
South-Western

Includes in-depth applications using PageMaker software (covers versions up to and including Version 4.0). Progress from relatively easy applications of page design, such as producing a flyer, to more difficult applications, such as developing a brochure, a newsletter, or a newspaper tabloid. $$

Desktop Publishing Using WordPerfect 5.0 & 5.1

Gehris and Setcavage
Dictation Disc Company

Provides students with several desktop publishing activities. Teaches students to create professional looking documents using an easy step-by-step method. $

Microsoft Works: Tutorial and Applications, Macintosh Version

Pasewark, Willis, and Pasewark, Jr.
South-Western

For use with Macintosh computers, this text workbook emphasizes the features of Microsoft Works Version 2.0 most frequently used in business. It offers instruction and applications for word processing, database, spreadsheet, communications, desktop publishing, and integration in a simple-to-complex manner. $$

PFS: First Publisher Tutorial and Applications

Pasewark, Willis, and Pasewark, Jr. South-Western

Provides comprehensive instruction for PFS: First Publisher, a leading desktop publishing program. Beginning with thorough coverage of desktop publishing concepts, the text workbook moves quickly into presenting the many features and capabilities of PFS: First Publisher. $

Publish It! Tutorial and Applications, IBM Version/Apple Version

South-Western

Introduces concepts and presents the unique and exciting capabilities of Publish It! in a simple-to-complex format. After mastering the concepts, students complete end-of-chapter activities designed for reinforcement. $$

Understanding Microcomputers and Application Software

Bergerud, Busche, and Gonzalez South-Western

Offers comprehensive, state-of-the-art coverage on everything from word processing to integrated software and desktop publishing. $$

Videos

Canvas: Video 1

MacAcademy

Learn basic tools and palettes, multiplex tools, menus and preferences, object (drawing) and bitmap (painting) concerns, grouping and locking objects, drawing order, shuffling, paste priorities, bezier curves, creating and editing, setting defaults, pattern sets, and foreground and background color use. $$

Canvas: Video 2

MacAcademy

Learn working with text, creation and modification, text on paths, encrusting, slanting, scaling, creating and manipulating, text outlines, text rulers, tabs formatting, leading, spell checking, special edit managers and tools, duplication of objects, auto tracing, layers and the layer manager, etc. $$

Canvas: Video 3

MacAcademy

Learn multiple object transformations, gradient fills, blending objects, combining and slicing objects, creation of presentation slide shows, dimensioning drawings, use of hatch (cross-section) patterns, separations for printing negatives, and system 7.0 special options. $$

Design and Layout Techniques for Desktop Publishers

MacAcademy

Buying a popular desktop publishing program doesn't automatically make us desktop publishers. A dynamic video full of hands-on hints, layout techniques, do's and don'ts, and professional design guidelines. It is for anyone using a graphics, design, or DTP program. $$

FreeHand: Video 1

MacAcademy

You will learn accessory files, using tools, backgrounds, printing options, graphics, palettes, defining colors, graphic tools, tints and shadows, rotation tool, grouping and layering, file menu, power duplication, and document setup. $$

FreeHand: Video 2

MacAcademy

You will learn custom colors, removing colors, creating styles, fill effects, type menu, fill menu, color menu, text on path, blending, composite graphics, and clipping paths. $$

FreeHand: Video 3

MacAcademy

You will learn layer managers, print specs., page setup, importing graphics, graphic tricks, blending colors, placing graphics, element info., overprinting, blending paths, and auto trace. $$

Illustrator: Video 1

MacAcademy

You will learn installation, components, selection tools, rectangle tools, oval tools, pen tool, grouping, ungrouping, paint menu, scaling tool, rotation tool, reflection tool, shearing tool, preferences, curves, conv. direction point, and pen tool. $$

Illustrator: Video 2

MacAcademy

You will learn opening program, windows, blending tool, make guide, scaling tool, rulers, graph paper, blending point, masking, auto tracing, text, text creation tool, custom fonts, and text paths. $$

Illustrator: Video 3

MacAcademy

You will learn separator, densitometer chart, type fonts, pantone colors, type manager, compound paths, cutting types, type manipulation, blending type, page layouts, custom patterns, and graphs. $$

Introduction to Desktop Publishing

Teaching Aids Inc.

Focusing on the beginning student, the video introduces key terminology with numerous over the shoulder on-screen examples. Students see how desktop publishing fits into the overall business picture and understand that publishing with computers is a skill that soon will become a basic business skill. $$$$

Lotus 1-2-3 "Graphs"

Teaching Aids Inc.

Shows you how to use the graph feature of Lotus 1-2-3. You will define data ranges, create pie charts, bar charts, and stacked bar charts. The power of graphs explained with easy step-by-step examples. $

MacDraw Pro: Video 1

MacAcademy

You will learn program, translators, slide show, help, tools, painting, pen tools, color appets, editing patterns, fills, text, object creation, polygon preferences, arc tool, drawing sizes, bezier tool, and import/export. $$

MacDraw Pro: Video 2

MacAcademy

You will learn importing charts, eye dropper tool, rulers, grouping, slide presentations, layer management, importing objects, gradient manager, editing colors, importing text, note tool, text ruler, EPS file, libraries, gradients, and drawing order. $$

PageMaker: Video 1

MacAcademy

You will learn desktop publishing tips, document set-up, margins/page options, page views, ruler/guide set up, using master pages, using column guides, using the tool box, layering text/graphics, headlines, graphics, creating reverses, placing graphics, placing text, and text blocks/strings. $$

PageMaker: Video 2

MacAcademy

You will learn setting preferences, creating shadow boxes, creating drop caps, using in-line graphics, inserting/deleting pages, text options, leading/kerning, creating pull quotes, forced justification, text rotation, paragraph options, using table editor, and manual kerning. $$

PageMaker: Video 3

MacAcademy

You will learn using story editor, using spell checker, search/replace, creating style sheets, new styles, using image control, text wrap options, color options, printing options, saving options, linking features, on-line help, using templates, and tips and tricks. $$

QuarkXPress: Video 1

MacAcademy

You will learn components, preferences, boxes, text manipulation, creating graphics, using tools, linking text, modifying tools, modifying graphics, printing options, using color, and editing text. $$

QuarkXPress: Video 2

MacAcademy

You will learn windows, linking graphics, screening graphics, master pages, word processing, spell checking, font options, formatting, tracking modification, text wrap, in-line graphics, and dummy pages. $$

QuarkXPress: Video 3

MacAcademy

You will learn page set-up, importing graphics, grouping, feathering text, color items, format changes, color separations, coloring graphics, creating colors, pantone colors, trapping color, printing options, using screens, and completing layouts. $$

WordPerfect 5.0: A Complete Course

Dennis P. Curtin — Regents/Prentice Hall

Includes information on the basics, editing and formatting, merge-printing and document assembly, desktop publishing, and special features. $

Software—MS-DOS, Macintosh, Apple

Advanced WordPerfect 5.0/5.1: Tutorial and Applications, Including Desktop Publishing

Sullivan — South-Western

Now students who know WordPerfect basics can learn how to use the advanced features of the world's number one word processing program. This tutorial presents the advanced commands in WordPerfect 5.0 and 5.1 in an easy-to-follow, step-by-step fashion and gives students time-saving tips and techniques. They will also learn how to avoid common problems. $$ MS

Clip Art Folio: A Library of Desktop Publishing Art

South-Western

A versatile collection of almost 200 electronic clip art images in 15 categories created especially for students' use. It can be used with most popular desktop publishing software programs, most paint and draw programs, and high-end word processing programs. $$$ MS, MAC, AP

Desktop Publishing Applications: Macintosh/PageMaker

Holly Yasui — Paradigm

Hands-on guide to desktop publishing on the Apple. Macintosh provides step-by-step instructions for creating business documents on a personal computer. With the use of PageMaker desktop publishing software, learn to prepare individual projects and templates with style sheets for on-going projects. $ MS

Desktop Publishing: Technology and Design

Holly Yasui — Paradigm

A practical text that will provide the student with a basic understanding of concepts and terminology for the production and design of professional quality publications with a desktop computer. $ MS

Desktop Publishing Tests for Desktop for WordPerfect 5.1

Margaret Brown — Dictation Disc Company

Evaluation tests problems on disks. Each test covers two to three functions to pinpoint deficiencies and key in on those functions that require remedial work. The tests are sequential and cumulative, they tell you the competency level of each student. Each test is given a point scale and time frame. Tests may be used with any book. $$ MS

Desktop Publishing Using Pagemaker on the IBM-PC Version 4.0/MAC

Don Busche — Regents/Prentice Hall

Text covers the desktop publishing essentials of design, typography, graphics, and text. It contains step-by-step sample activities in each chapter plus a variety of hands-on drill and practice activities. $ MS, MAC

Desktop Publishing Using WordPerfect 5.0 & 5.1

Gehris and Setcavage — Dictation Disc Company

Evaluation tests problems on disks. Each test covers two to three functions to pinpoint deficiencies and key in on those functions that require remedial work. The tests are sequential and cumulative, they tell you the competency level of each student. Each test is given a point scale and time frame. Tests may be used with any book. $$ each MS

Desktop Publishing with WordPerfect 5.1
Dennis P. Curtin Regents/Prentice Hall
$ MS

Microsoft Works: Tutorial and Applications, Macintosh Version
Pasewark, Willis, and Pasewark, Jr. South-Western
For use with Macintosh computers, this text workbook emphasizes the features of Microsoft Works Version 2.0 most frequently used in business. It offers instruction and applications for word processing, database, spreadsheet, communications, desktop publishing, and integration in a simple-to-complex manner. $$ MAC

Multimate Advantage II for Beginners
Straka and Poropat Regents/Prentice Hall
$ MS

Multimate Advantage II for Office Professionals
Straka and Poropat Regents/Prentice Hall
$ MS

PC Power: Microcomputer Applications
Klemin and Harsha Glencoe
A text-software program that supports a broad-based course in microcomputer concepts and applications. It provides students with the most complete hands-on PC training.
$ MS, MAC, AP

PFS: First Publisher Tutorial and Applications
Pasewark, Willis, and Pasewark, Jr. South-Western
Provides comprehensive instruction for PFS: First Publisher, a leading desktop publishing program. Beginning with thorough coverage of desktop publishing concepts, the text-workbook moves quickly into presenting the many features and capabilities of PFS: First Publisher. $$ MS, AP

Publish It! Tutorial and Applications, IBM Version/Apple Version South-Western
Introduces concepts and presents the unique and exciting capabilities of Publish It! in a simple-to-complex format. After mastering the concepts, students complete end-of-chapter activities designed for reinforcement. $$ MS, AP

Ventura Publisher 2.0: Concepts and Applications for the Desktop Publisher
Auvil and Stewart South-Western
Ideal for classroom, laboratory, and individual study. It is an efficient tool for learning one of the most powerful desktop publishing software packages available. It is designed to help students understand how to use the power of Ventura without being overwhelmed by its many capabilities. $$ MS

WordPerfect 5.0: A Complete Course
Dennis P. Curtin Regents/Prentice Hall
Includes information on the basics, editing and formatting, merge-printing and document assembly, desktop publishing, and special features. $

Simulations

Omega Desktop, Inc.— A Desktop Publishing Simulation
Boyce, Auvil, and Whitman South-Western
Pulls together the fundamental concepts of desktop publishing and lets students apply them in a realistic business environment. $$

Surfside Resort: A Business Publishing Simulation
South-Western Sullivan
Designed specifically for WordPerfect software users. As administrative assistants to the general manager of a beach resort, students complete various desktop publishing exercises. $

Wheels for Sale: A Computer Applications Simulation
Boyce and Boyce South-Western
Have fun completing 12 information-processing projects and learning about the uses of computers in real life. Updated to keep pace with the newest features in popular commercial software packages and presented in a simple-to-complex order, the projects cover word processing, database, mail merge, spreadsheets, electronic mail/ telecommunications, graphing, integrated software, and desktop publishing. $$

Other

Transparencies of the Reference Manual for Desktop Publishing Using Wordperfect 5.1
Gehris and Setcavage Dictation Disc Company
$$$$$

Reference Books

1-2-3 Graphics Techniques
Steve Sagman Que
The most effective methods for spreadsheet graphics and analysis! Features tips and techniques for high-quality graphs and other presentation material and is packed with examples and illustrations. $

CorelDraw! Quick Reference
Que Development Group Que
Quick informative guide to creating impressive desktop artwork. Contains fundamental graphics and illustrations. $

Harvard Graphics Quick Reference
Que Development Group Que
Quick-access resource for improved business graphics. Vital command and function explanations for fast, easy learning. $

Que's Macintosh Multimedia Handbook
Bove and Rhodes Que
Great introduction to graphics, video, sound, and animation. Covers most popular Macintosh multimedia software. $

The Best Book of Harvard Graphics
John Mueller Sams
Provides a comprehensive tutorial on the basics of Version 2.3 of this top-selling graphics software. The author also includes insightful hints, tips, techniques, and a disk containing numerous chart examples. Features a detailed table of contents and index for easy reference and problem-solving. $

The First Book of Harvard Graphics
Jack Purdum Sams
Uniquely suited for the novice computer graphics user. Provides a quick-and-easy guide to the basics of using this popular software package. Plus, the effective Quick Steps tutorial, combined with end-of-chapter exercises, teaches the user how to master Harvard Graphics. $

The First Book of LotusWorks
Sams
An excellent beginner's guide to this broad-based and practical integrated software. Quick Steps lessons and a Quick Command Reference are included to provide the quickest, most efficient learning possible. Coverage includes spreadsheet, graphics, word processing, and communications. $

The First Book of Microsoft Works for the PC
Debbie Walkowski Sams
Step-by-step information brings beginners quickly up to speed with Microsoft Works. Quick Steps tutorials take readers through Works' word processing, spreadsheet, database, graphics, and communications systems. Focuses on each module separately and presents performance tips for integrating them. $

The First Book of PC Paintbrush
Deke McClelland Sams
Designed especially for beginning user of PC Paintbrush, this uncomplicated guide provides a clear, step-by-step tutorial to maximize graphic creativity. An array of illustrations and inventive examples makes this book an invaluable tool for desktop graphics! $

Using DrawPerfect
Stuart Bloom Que
Dozens of high-performance, results-oriented samples and techniques. helps users create eye-catching bar, pie, line, and other informative graphs. $

Using Freelance Plus
Jim Meade Que
Quick Start tutorials ensure fast productivity. Features advanced techniques and numerous examples. $

Using Harvard Graphics, 2nd Edition
Sagman and Sandlar Que
Hundreds of samples, charts, and graphs; step-by-step instruction; and a tear-out Menu Map. Discusses bar, pie, and line graphs and charts plus advanced presentation tips. $

Using MacDraw
Marvin Bryan Que
Includes techniques, tips, and shortcuts to improve desktop graphics. Covers layering, color usage, templates, and creating an object library. $

Using MacroMind Director
Bove and Rhodes Que
Extensive coverage of animation, HyperCard, and interactive presentations. Expert examples and professional advice. $$

Using PowerPoint
Jim Meade Que
Beginner's introduction to effective business presentations. Combines Quick Start tutorials and comprehensive Command Reference. $

Texts

Computer Explorations for Business
Goldman and Furjanic Glencoe
Helps acquaint students with the functions of integrated, computerized business tools. In simulated job settings, students manipulate data using a simplified word processor, database, spreadsheet, and graphics tool. A telecommunications tool is simulated. Sophisticated equipment is not needed. $$$$$

Introduction to Business Graphics

Auvil and Auvil — South-Western

Provides thorough coverage of design elements to enhance publications through the use of business graphics software. Learn to prepare text charts and diagrams, statistical graphs, maps, logos and icons, cartoons, and realistic illustrations and to utilize these in desktop publications and presentations. $

Mactivities: Learning to Use the Macintosh Computer

Auvil — South-Western

As first-time Macintosh users, your students learn to produce documents efficiently and quickly with this introductory guide. This spiral-bound text is divided into two parts: the first part covers the Mac's operating system; the second part guides students through the basics of word processing and paint and draw graphics. $

Microcomputer Business Applications and Projects

Busche and Esbensen — Regents/Prentice Hall

Text enables readers to become comfortable with four application software areas: database management, word processing, spreadsheets, and business graphics and presents IBM computer-based activities. Contains extensive illustrations throughout. $

Using PFS: First Choice Tutorial and Applications

Drum and Jansen — South-Western

Guides students through PFS: First Choice, the integrated software program that operates as word processor, file manager, spell checker/thesaurus, spreadsheet, graphics generator, and electronic communication to other computers. $$

Text Workbooks

Information Processing Applications for the Microcomputer

Clark, Allen, and Klooster — South-Western

Provides instruction and applications for the correlated software, containing programs for inventory, payroll, graphing, loan amortization, simulated telecommunications activities, and games related to computer concepts. $$$

Videos

Microsoft PowerPoint: Video 1

MacAcademy

You will learn sample slides, slide changer, title sorter, color, creating slides, slide masters, graphics, spell checker, label tool, tabs, genigraphics, auto slides, handouts, speaker notes, story board, printing, and tips and tricks. $$

Paint and Draw

MacAcademy

You will learn types of programs available, tool palettes, creating graphics, screen dumps, using the clipboard, grouping graphics, paint tools, paint special effects, draw special effects, and proof prints. $$

Persuasion: Video 1

MacAcademy

You will learn program installation, creating presentations, auto templates, slide outline, editing text, place holders, background masters, creating and using graphics, creating slide shows, charts and tables, draw tools, text and graphics, printing techniques, and output functions. $$

SuperPaint: Video 1

MacAcademy

You will learn preferences, tools, draw objects, line widths, creating tools, pattern tools, special paint tools, power keys, filling patterns, x-ray lasso, duplicate/replicate, view menu, option menu, plug-ins, and selecting. $$

SuperPaint: Video 2

MacAcademy

You will learn paint menu, fill blending, text effects, paint effects, brush symmetry, air brush, draw layers, draw grouping, object information, bezier curves, super bits, and plug-in tools. $$

Software—MS-DOS, Macintosh, Apple

Clip Art Folio: A Library of Desktop Publishing Art

South-Western

A versatile collection of almost 200 electronic clip art images in 15 categories created especially for students' use. It can be used with most popular desktop publishing software programs, most paint and draw programs, and high-end word processing programs. $$$ MS, MAC, AP

Computer Explorations for Business

Goldman and Furjanic — Glencoe

Helps acquaint students with the functions of integrated, computerized business tools. In simulated job settings, students manipulate data using a simplified word processor, database, spreadsheet, and graphic tools. A telecommunications tool is simulated. Sophisticated equipment is not needed. $$$$$ MS, AP

Information Processing Applications for The Microcomputer

Clark, Allen, and Klooster — South-Western

Provides instruction and applications for the correlated software, containing programs for inventory, payroll, graphing, loan amortization, simulated telecommunications activities, and games related to computer concepts. $$$ MS, MAC, AP

McGraw-Hill Graphing

Gregg/McGraw-Hill — Glencoe

Gives users the power to present easy-to-understand visual representations of complex numeric data. The program offers the option of three graph styles—bar, stacked bar, and point. Each graph can display three sets of values, with each set being plotted at up to 12 intervals. $ MS, AP

Using PFS: First Choice Tutorial and Applications
Drum and Jansen — South-Western
Guides students through PFS: First Choice, the integrated software program that operates as word processor, file manager, spell checker/thesaurus, spreadsheet, graphics generator, and electronic communication to other computers.
$$ MS

Telecommunications

Texts

Computer Explorations for Business
Goldman and Furjanic — Glencoe
Helps acquaint students with the functions of integrated, computerized business tools. In simulated job settings, students manipulate data using a simplified word processor, database, spreadsheet, and graphics tool. A telecommunications tool is simulated. Sophisticated equipment is not needed. $$$$$

Data Communication, Networks, and Systems
Thomas C. Bartee, Editor — Sams
Readers will learn the advantages and disadvantages of local area networks. Also covered are the operation of modems, multiplexers, and concentrators; the characteristics of fiber optics and coaxial cables; and the forces shaping the structure and regulation of common carrier operations. $$

Networking Personal Computers, 3rd Edition
Michael Durr and Mark Gibbs — Que
Step-by-step resource for installation and practical network solutions. Essential information for networking IBM compatibles with Macintosh machines. $

Secretarial and General Office Procedures, 2nd Edition
Lucy Mae Jennings — Regents/Prentice Hall
Text presents office procedures in easy-to-understand steps. It covers audio, audiographic, and video teleconferencing techniques and suggests tips for coping with job related stress. $

Telecommunications: A Short Course
Dennis P. Curtin — Regents/Prentice Hall
Part of Curtin's COMPASS series. It covers telecommunications using ProComm Plus as the example. $

The First Book of Modem Communications
Jack Nimersheim — Sams
Written as a "primer" and not a technical reference, this book introduces readers to the concepts governing modem communications, discusses vital hardware and software components, and offers pragmatic advice on their use. $

Understanding Local Area Networks, 2nd Edition
Stan Schatt — Sams
Using a technically oriented approach, this book provides an understanding of the theory behind the various types of network architecture and data transmission methods. It also provides an overview of the major LANs currently on the market, with reviews and compatibility ratings with other systems. $

Text Workbooks

Telecommunications: Concepts and Applications
Cubbler, Olivo, and Scrogan — South-Western
Provides the foundation for a 15 to 20 hour unit of instruction in this vital and changing area of technology. $$

Software—MS-DOS, Macintosh, Apple

Computer Explorations for Business
Goldman and Furjanic — Glencoe
Helps acquaint students with the functions of integrated, computerized business tools. In simulated job settings, students manipulate data using a simplified word processor, database, spreadsheet, and graphics tool. A telecommunications tool is simulated. Sophisticated equipment is not needed. $$$$$ MS, MAC, AP

Information Processing Applications for the Microcomputer
Clark, Allen, and Klooster — South-Western
Provides instruction and applications for the correlated software, containing programs for inventory, payroll, graphing, loan amortization, simulated telecommunications activities, and games related to computer concepts.
$$$ MS, MAC, AP

Microcomputers: A Practical Approach
Klemin and Harsha — Glencoe
For use in one- or two-semester courses, Microcomputers provides generic applications for spreadsheet, database, graphing, word processing, integrated, and communications software. $ MS, MAC

PC Power: Microcomputer Applications
Klemin and Harsha — Glencoe
A text-software program that supports a broad-based course in microcomputer concepts and applications. It provides students with the most complete hands-on PC training.
$ MS, MAC

Telecommunications: Concepts & Applications
Cubbler, Olivo, and Scrogan — South-Western
Provides the foundation for a 15- to 20-hour unit of instruction in this vital and changing area of technology.
$$ MS, MAC, AP

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Simulations

Silver Unicorn: A Telecommunications Simulation
Dickey-Olsen — South-Western
Students work as executive assistants for Silver Unicorn, a nationwide chain of boutiques specializing in rare and unusual merchandise. Learn the various aspects of telecommunications in a business office environment. $$

Wheels for Sale: A Computer Applications Simulation
Boyce and Boyce — South-Western
Have fun completing 12 information-processing projects and learning about the uses of computers in real life. Updated to keep pace with the newest features in popular commercial software packages and presented in a simple-to-complex order, the projects cover word processing, database, mail merge, spreadsheets, electronic mail/telecommunications, graphing, integrated software, and desktop publishing. $$

Common Essential Elements

Careers

Reference Books

Get the Job You Want

Melanie A. Brown Houghton Mifflin

Features self-assessment quiz to help students focus efforts, real job applications and employment tests that give a head start in today's competitive market, the secrets of projecting a professional image, and hundreds of personalized activities and success tips. $

The Job Hunter's Guidebook

Greene and Martel Houghton Mifflin

Features samples and do's and don'ts that make resume writing easy, a self-assessment quiz, guides for crafting persuasive cover letters, effective interviewing techniques, and other tools to help applicants fully prepare. $

Texts

Advancing in the World of Work

Kimbrell and Vineyard Glencoe

Takes special needs students one step further on the road to independence and helps them meet the daily world-of-work challenges with confidence. Its emphasis on building self-esteem promotes an "I can do it" attitude. $

Business Dynamics: An Introduction to Business and Occupations

Conover, Gordon, and Ramstetter Glencoe

Introduces students to the working world and helps prepare them to make successful occupational choices. It encourages students to look more closely at themselves, study the basics of business, and apply the decision-making process to career and life-style choices. $

Career Skills, 2nd Edition

Plate and Volz-Patton Glencoe

This second edition of this common-sense, teaching and learning program carries students through the first steps of career planning. $

Dealing with the Interview

Teaching Aids Inc.

Shows how to get ready for the interview, express competencies to the interviewer, and effective follow-up after the interview. $$$$

Key to Reference Cost	
$	0-25
$$	26-50
$$$	51-75
$$$$	76-125
$$$$$	126-199
$$$$$$	200+

Downtown Deli

Teaching Aids Inc.

Contemporary drama about young people on their own for the first time and their problems (and some successes) on their jobs at the Deli. Problem situations and attitudes are very realistic. This is perfect for teaching employability skills to youth. $$$$

Effective Interview Skills

Teaching Aids Inc.

Job seekers learn basic skills that improve their interview performances dramatically. Provides a three-step approach for answering open-ended "problem" questions. $$$$

Exploring Career Options

Teaching Aids Inc.

Illustrates the best resources available for exploring career possibilities. Emphasis is placed on the value of the school guidance office as being the best place to begin the exploration process. $$$$

Entering the World of Work, 3rd Edition

Kimbrell and Vineyard Glencoe

Designed specifically to help special needs students find work, develop career goals, and cope with life and the workplace. Developed for young people with reading problems and learning disabilities, text features a third- to fourth-grade reading level with larger type. $

How to Find and Apply for a Job

South-Western

In easy-to-understand language, this softbound text takes the reader through the job-finding process from personal inventory to interview follow-up. Information about recent government regulations affecting job applicants and prospective employees is included in this revision. $

Independent Study for the World of Work, 5th Edition

Kimbrell and Vineyard Glencoe

Perfect for integrating job and life skills into your course. It is designed specifically for students in work-study programs who do not have regularly scheduled classes with a coordinator. Detailed step-by-step instructions and an eighth-grade reading level. $

Introduction to Business: Our Business and Economic World

Brown and Clow Glencoe

Contains economic and business concepts that will help prepare students to make decisions as wage earners, consumers, and citizens in a market economy. Comprehensive program combines explanations of business and economic concepts with practical applications of those concepts. $

Job Finding Fast

J. Michael Farr — Glencoe

The job-search book for those job-seekers and career changers who are still uncertain about their career goals. This text covers the major steps in career planning and job finding, from identifying a job objective to organizing the day-to-day job search. $

Job Preparation

PSI Associates, Inc. — Regents/Prentice Hall

Offers basic information and individualized activities that teach readers skills needed to find and keep employment. Covers such topics as writing resumes and letters of application, where to look for a job, interviewing, and changing jobs. $

Letter of Application and Resume Using A Microcomputer

Jackson — South-Western

Provides complete coverage of the resume and letter-writing process using a computer-assisted instructional approach with a text-workbook and tutorial software. Learn what is included and not included in a letter of application and resume and how to properly format both. $

Surviving on the Job, 2nd Edition

Jay Como — Glencoe

Provides students 24 practical survival skills that workers most need for successful job retention. It develops student abilities with new survival skill exercises, more math and communication skill exercises, and contains a new "Meeting Employee Expectations" feature. $

Text Workbooks

Career Development

Harvey and Schutz — Paradigm

Provides performance-based instruction in career identification, resume development, interviewing, techniques, and on-the-job career development. $

Dress Right for Business

Nancy Golden — Glencoe

Designed to help the student build an attractive, affordable business wardrobe. It is suitable for a one to three-week unit in a course in leadership development or career preparation. $

Exploratory Business, 7th Edition

Grubbs and Ashman — Glencoe

Gives students the chance to experience job-related tasks in the areas of business that offer the greatest of career opportunities for beginning workers. $

Help with Finding a Job

Melanie Brown — Glencoe

Help with finding a job includes topics such as preparing for the job search, exploring job possibilities, writing a resume, and handling the interview effectively. $

Personal Skills

Chamberlain and Eubanks — Glencoe

Older students with poor reading skills can learn about the relationship skills they will need with this lively easy-to-read text. It focuses on basic skills and attitudes necessary for good relationships with family, friends, and coworkers. Text has more than 100 two-color photos and drawings. $

Planning Positive Careers

Marc Landy — Regents/Prentice Hall

Text is appropriate for use with a variety of student populations—recent high school graduates, vocational school students, those in their 30s and 40s making career changes. It prepares students to explore any kind of career path in any field. $

Practical Job Skills

John McHugh — EMC Publishing

A flexible approach to presenting the basics of how to get a job and keep it. Loaded with practical, hands-on material, this program will help students enter the job market with confidence. $

Resume Writing, A Complete Reference Guide

McCabe and McCabe — South-Western

Simplifies the resume-writing process by providing easy, concise, step-by-step directions reinforced with numerous examples. $

Solving Problems/Making Decisions

Daggett and Marrazo — South-Western

Prepares students for the work world as they develop practical skills for making decisions and solving problems. $

The Job You Want—How to Get It

Blackledge and Blackledge — South-Western

This unique text-workbook guides in planning for the job expected to acquire. Meaningful activities and illustrations are included in each part. $

The Working Citizen

Safford — South-Western

Twelve short chapters and integrated student activities provide students with information for the work world. $

World of Work Curriculum Activities Workbook

Teaching Aids Inc.

May be duplicated by the instructor(s) for use in a single building. It contains on-the-job work assignments, crossword puzzles, and classroom learning activities. $$

Your Attitude Counts

Fruehling and Oldham — Paradigm

A nuts and bolts primer in the field of business human relations. It teaches the importance of good working relationships for career success and illustrates how attitude affects human relations. $

Your Future: Plans and Choices

Daggett — South-Western

Prepares students for adult responsibilities as family members, consumers, home managers, and wage earners. $

Videos

10 Easy Ways to Lose Your Job!

Teaching Aids Inc.

Using the format of a drama, plus comments from a career education specialist, this video explores the most common reasons young people are fired from entry-level positions. Among the topics illustrated are socializing on the job, not understanding the job description, and repeating mistakes. $$$$$

Before Tomorrow Becomes Today

Teaching Aids Inc.

This live-action VHS video encourages proper planning to realistically determine and attain one's life and employment goals. Discusses the types of education and training required for skilled and unskilled jobs. Leads the viewer through planning his/her life and career goals. $$$$

Career Exploration and Planning Program (CEPP)

Teaching Aids Inc.

Four video tapes that present concepts of career exploration, interests, temperament, and aptitudes. Titles are: Your Future: Planning Through Career Exploration; Your Interests: Related To Work Activities; Your Temperaments: Related To Work Situations; and Your Aptitudes: Related To Learning Job Skills $$$$$$

Career Goals: Your Ladder to Success

Teaching Aids Inc.

Students explore the suitability of careers based on self-evaluation, and career experience through demonstration of various circus acts. By taking a realistic look at themselves, and by examining the qualifications for various careers, students learn how to make wise decisions regarding career choices.

$$$$

Career Insights

Teaching Aids Inc.

A library of career overview video tapes specifically designed to present invaluable insights on occupations of interest to high school and college students. Presents details of the skills employed in each job as well as interviews with persons employed in various career fields. $$

Career Planning Steps

Teaching Aids Inc.

Shows the differences between a job and a career using real-life examples. Instruction in the areas of research, self-examination, and career center utilization are provided. The training/education requirements and general job search techniques are discussed. $$$$

Career Planning: Putting Your Skills to Work

Teaching Aids Inc.

Helps students assess their interests, abilities, personality styles, and personal values in a step-by-step format. Then it shows how they can use this assessment as an individual guideline for making career choices that match their unique characteristics and preferences. $$$$$$

Dealing with the Interview

Teaching Aids Inc.

Shows how to get ready for the interview, express competencies to the interviewer, and effective follow-up after the interview. $$$$

Downtown Deli

Teaching Aids Inc.

Contemporary drama about young people on their own for the first time and their problems (and some successes) on their jobs at the Deli. Problem situations and attitudes are very realistic. This is perfect for teaching employability skills to youth. $$$$

Effective Interview Skills

Teaching Aids Inc.

Job seekers learn basic skills that improve their interview performances dramatically. Provides a three step approach for answering open-ended "problem" questions. $$$$

Exploring Career Options

Teaching Aids Inc.

Illustrates the best resources available for exploring career possibilities. Emphasis is placed on the value of the school guidance office as being the best place to begin the exploration process. $$$$

Expressing Your Competencies

Teaching Aids Inc.

Covers selecting an appropriate job objective, identifying and expressing technical competencies, designing an effective resume, and communicating skills to an employer. $$$$

Find the Job World

Teaching Aids Inc.

Assists in planning and organizing an effective job search process by learning at least eleven sources to look for job openings, to understand the importance of persistence and quick follow-up during the job search, and to learn four ways to follow-up job leads. $$$$

Finding a Company That's Right for You

Teaching Aids Inc.

This up-beat, fast-paced docu-style video emphasizes that viewers need to understand and consider the company structure as one of their career considerations. Look inside actual companies as they go about their daily routine. Visit work sites from three completely different work situations.

$$$$

Getting Hired and Advancing

Teaching Aids Inc.

Includes information on the interview and on climbing the ladder to success. $$

How to Succeed in the Changing Workplace

Teaching Aids Inc.

Explains what has happened to American business during the past several decades and why. Takes viewers to some of our country's most successful corporations to see how their employees have adapted to changing circumstances and new challenges. $$$$

Identify Your Skills: A Job Search Essential

Teaching Aids Inc.

Knowing your skills is important to select the right job and to do well in interviews where over 90% of job seekers can't describe their skills. This video show specific activities to help identify hundreds of skills. $$$$

If You Really Want to Get Ahead

MarkED

This program offers hundreds of ideas on how to manage smarter, get along with people better, and recognize and apply those things that are vital to professional growth. Divided into segments, this program may be used for group or individual training. $$$$

Introduction to Business: Our Business and Economic World

Brown and Clow Glencoe

Contains economic and business concepts that will help prepare students to make decisions as wage earners, consumers, and citizens in a market economy. Comprehensive program combines explanations of business and economic concepts with practical applications of those concepts. $

Investigating the World of Work

Teaching Aids Inc.

Matches the knowledge of self (goals, values, interests, temperaments, etc.) with job requirements. Utilizes available resources in identifying and selecting career groups. $$$$

Job Line Report 2: How to Interview for A Job

Teaching Aids Inc.

A partial talk show format with teen hosts who have older "expert" guests. Guests critique what's right or wrong with sample interview scenarios. $$$$

Job Search Methods that Get Results

Teaching Aids Inc.

The two best methods—networking and direct employer contact—are emphasized along with techniques for finding those hidden jobs. $$$$

Job Search Preparation

Teaching Aids Inc.

Focuses on assessing skills and experiences and deciding at what kinds of jobs and companies the viewer will enjoy and succeed. Videos emphasize what recruiters look for in a resume, how to prepare an effective resume, use references, and write cover letters. $$$

Job Survival Skills: It's a Jungle Out There!

Teaching Aids Inc.

The job market really is a jungle of sorts, and workers have to learn the ropes (vines?) to survive. Getting ahead is a different bag of coconuts entirely. Yet there are things that can increase a person's chances for job survival and success. $$$$

Job World Literacy

Teaching Aids

Helps learn why workplace literacy is important to employers and success on the job. Teaches about different types of office equipment found on most jobs including copiers, FAX machines, telephones and computers. Covers how to write a business letter containing all the necessary components, etc. $$$$

Jobs for the 21st Century

Teaching Aids Inc.

This live-action video will help viewers make sense of their options and find a systematic way to identify careers that fit particular interests and aptitudes. Factual narration and interviews with experts give students a starting point from which they can begin to make intelligent choices. $$$$$$

Keys to Job Success

Teaching Aids Inc.

Illustrates how to keep jobs, how to get along with the boss, with others, and with the organization. $$$$

Know Your Skills

Teaching Aids Inc.

Topics include specific job skills, transferable skills, and good worker traits. Keys to success are a positive attitude and persistence. $$$

Mirror Mirror

Teaching Aids Inc.

Topic is non-traditional careers for women. Features a young eighth-grade female talking to her reflection in the mirror. It is her reflection that enlightens the young student to take a long look at her attitudes and perspectives concerning her chosen high school subjects and limited career outlook. $$$

Negotiating the Job Offer

Teaching Aids Inc.

Teaches the job seeker to be a detective when negotiating an offer. Viewers learn how to set a salary range, negotiate a compensation package, find out long-term earning and advancement potential, and decide if an organization is right for them. $$$

Occupational Preparation

Teaching Aids Inc.

Developing and implementing a training program stressing course selection and sequencing. Views various postsecondary school educational and training options. $$$$

Organize Your Job Search: The Key to Getting a Good Job Fast

Teaching Aids Inc.

Common sense techniques make the job search a job itself: weekly and monthly calendars, sample daily schedules, follow-up cards and a "tickler" card file reminder system. These cut job search time in half! $$$$

Paper Job Search Tools: From Resumes to Applications

Teaching Aids Inc.

Tips are provided on the best ways to use paper job search tools to get interviews. Resume basics—with examples—cover how best to create and use chronological or "skills" resumes. Also includes tips for completing applications that will reduce the chances of being screened out. $$$$

Personality on the Job: Why People Work

Teaching Aids Inc.

How personality effects work habits is the emphasis of this program. It looks at how to motivate different personality themes in the work environment and discover why some jobs are more suited to certain personalities. (15 minutes) $$$

Plan for Success

Teaching Aids Inc.

Specific and precise terms are used to show HOW to reach a career goal working within the system without going bananas. $$$$

Positive Attitudes I: Getting a Job

Teaching Aids Inc.

This live-action video emphasizes how a positive attitude in preparing for the job search increases the chances for employment. Stresses the importance of a positive self-concept during the interview. Provides helpful tips for exhibiting a positive attitude. $$$$

Positive Attitudes II: Keeping a Job

Teaching Aids Inc.

More people lose their jobs due to a lack of a positive attitude than a lack of needed job skills. Stresses the positive attitudes necessary to keep a job. Included are accepting constructive criticism, keeping a good appearance, willingness to improve skills, and being considerate of co-workers. $$$$

Preparing NOW for Success in the Future

Teaching Aids Inc.

Discusses the importance of careful planning when pursuing educational and training options. Reinforces the need for sound high school class selection by illustrating that all high school courses are related to the world of work. $$$$

Self Awareness and Your Career Options

Teaching Aids Inc.

How to organize information about yourself to properly present your qualifications. Involves the realistic understanding and setting of goals. $$$$

Successful Interviewing

Teaching Aids Inc.

Discusses preparing for the interview, answering and asking questions from the interviewer, what recruiters look for, how to show control during different interviewing techniques, and how to communicate strengths. $$$

Technical Occupations

Teaching Aids Inc.

Clinical Laboratory Technicians, Medical Records Technicians, Electrical Engineering Technologists, Drafters, Chemical Technologists, Air Traffic Controllers, Computer Programmers, Technical Writers, Computer Operators, Computer and Peripheral Equipment Operators. $$$$

The Basic Guide for Your Job Search

Teaching Aids Inc.

Prepares you to land the job you want. Discover the formula to a successful job search. Program was written with the expertise and knowledge of a counselor and career planning specialist, the street smarts of a placement center agency professional, and the know-how of a professional image consultant. $$$$

The Empowered Worker: Doers and Planners

Teaching Aids Inc.

Takes viewers to a company that has recently empowered its workers. See the effects of empowerment and how to successfully meet the challenges of empowerment at the company. $$$$

The Tough New Labor Market — and What It Takes to Succeed

Teaching Aids Inc.

Presents an overview of labor market trends. Describes the fastest growing jobs for the 90's and the rapidly declining occupations. Reinforces the need for education and training and provides practical suggestions for career planning. $$$$$

The Video Guide to Occupational Exploration

Teaching Aids Inc.

An informative, entertaining, and comprehensive series of 14 video programs covering each occupational cluster. Organized according to the 12 interest areas covering all 66 worker trait groups utilizing an easy-to-comprehend and enjoyable format. $$$

The Business Plan: Your Road Map for Success

MarkED

An excellent overview of how a business plan can be used to enhance a business's potential for success. Relatively high level, but may be used in segments. Viewers are introduced to the seven steps of a successful business plan. $$

The Work Place

Teaching Aids Inc.

Tips for success on first jobs from employers. Managers tell what they look for and expect from their entry-level workers. Managers from McDonald's, UPS, a retail tire store, a restaurant, a discount store, a honey producer, and a bank teller teach employer expectations, job survival skills, etc. $$$$

Uncovering Job Opportunities

Teaching Aids Inc.

Shows how to use effective job search resources, utilizing the telephone, and designing effective letters of inquiry. $$$$

Vocational Visions Career Series

Teaching Aids Inc.

Designed to increase career awareness by providing high school and vocational students with information that will help them make appropriate career decisions. Includes interviews with people in various occupations to provide useful information in a lively and personal format that makes viewing fun. $$

Where Do I Fit In?

Teaching Aids Inc.

Emphasizes the importance of personal information gathering as the first significant step in determining how one fits into the workforce of the 21st century. The significance of interests, goal-setting, personality style, preference for specific work activities, etc. $$$$

Why Work? Six Reasons Why You're Better Off Employed

Teaching Aids Inc.

The employed lifestyle is better, unemployment provides no opportunity for advancement, we are more employable when employed, we are positive role models for our children, we have higher self-esteem, and there are programs to help with the transition to working. $$$$

You and Your New Job

Teaching Aids Inc.

This three-part video series teaches job survival skills for first-time and semiskilled employees. Videos include: Getting a Good Start, You and Your Coworkers, and Working with Your Supervisor. $$$$$$

Your Educational Skills: Don't Leave Home Without Them

Teaching Aids Inc.

This live-action video discusses the necessity of developing adequate educational skills and illustrates how math, language and reasoning competencies are related to being successful in the world of work. $$$$

Your Job: Now It's Up to You

Teaching Aids Inc.

Emphasizes the importance of proper actions, work habits, and attitudes in keeping a job. Describes the many expectations of employers and coworkers. Emphasizes the ways to make a good impression on supervisors and coworkers. Stresses the importance of developing good working relationships. $$$$$$

Your Vocational Job Search Campaign: Successful Guerrilla Tactics

Teaching Aids Inc.

Conducting a successful job search requires the same steps as running an effective military campaign. The job seeker must know their enemy, plan a strategy, pull out the big guns, disarm the competition, and prepare for the main offensive. $$$$

Software—MS-DOS, Mactintosh, Apple

Choices and Goals

Morris, Ryan, and Ryan — Glencoe

This software program allows career preferences to be explored. It provides a personalized, three-page profile printout. No computer experience is needed to operate this easy-to-use program. $$$$$ AP

Introduction to Business: Our Business and Economic World

Brown and Clow — Glencoe

Contains economic and business concepts that will help prepare students to make decisions as wage earners, consumers, and citizens in a market economy. Comprehensive program combines explanations of business and economic concepts with practical applications of those concepts. $ MS, AP

Life and Career Planning

Teaching Aids Inc.

Emphasizes the importance of deciding upon one's desired lifestyle and the need for making plans to achieve that lifestyle. Orients the user to the difference between skilled and unskilled jobs and the various skill requirements of each. $$$$ MS, AP

Succeeding in the World of Work

Teaching Aids Inc.

Contains multiple choice, matching, and true/false questions. This package is suitable for any instructional area, particularly cooperative training programs. Topics include: job applications, interview techniques, work attitudes, values and goals, work habits, career clusters, etc. $$$ MS, AP

Simulations

CompuHelp Inc.: An Office Simulation

Olive Church — EMC Publishing

This package simulates the interdependent work of four office positions. Tasks for an office manager, receptionist, word/information processor, and data-entry clerk are generated from information provided in the package and from the work done by the students themselves. $

Introduction to Business: Our Business and Economic World

Brown and Clow — Glencoe

Contains economic and business concepts that will help prepare students to make decisions as wage earners, consumers, and citizens in a market economy. Comprehensive program combines explanations of business and economic concepts with practical applications of those concepts. $

Software Solutions, Inc.: A Practice Set for the Electronic Office

Fruehling and Weaver — EMC Publishing

Designed to prepare students to enter the job market as "state-of-the-art" office support workers. $

Other

Career Exploration Kit

Teaching Aids Inc.

Invites the user to experience a variety of careers by participating in group and individual projects. Activities which seek to reproduce real-world situations guide the user to discover a career that can be both creative and productive. Enables the student to develop good work skills. $

Career Guidance Posters

Teaching Aids Inc.

Topics include traits and jobs, your personality, government resources, community resources, school resources, attitudes for job hunters, words-occupations, job search skills, job and school courses, kinds of jobs, your career plan, some job sources, etc. Eighteen posters in all. $$

Discover Yourself, Discover Job Charts

Teaching Aids Inc.

Titles of the 10 wall charts include: What do I like?, What am I like?, Why do I study?, How should I study?, What jobs fit my interests?, How do I find a job?, DOT: how do I apply for a job?, How can I look good?, What do I say?, and Now that I'm hired—What do I do? $$

Goal Planning

Teaching Aids Inc.

These 8½" X 11" printed forms (both sides) challenge participants to set goals and build steps to reach them. Encourages the planning of 5, 10, and 20 year goal levels. $

Getting A Job, Process Kit
Zedlitz South-Western
Offers an organized approach to finding and securing the jobs wanted. It has been completely updated to address current job search techniques. $

The Employability Inventory
Teaching Aids Inc.
A self-assessment instrument providing students the opportunity to determine how they would react to various situations regarding getting and keeping a job. Sixty-eight cards with a situation with four possible answers are listed on the front of the card. The correct answer is on back. $

The Work Experience Planner
Stull and Zedlitz South-Western
Gives the most complete, step-by-step job training possible. This easy-to-understand text-workbook takes you through 30 activities pertaining to on-the-job experiences. $

Entrepreneurship

Text Workbooks

Business Ethics and Etiquette
Teaching Aids Inc.
In the world of business there is an emphasis being placed upon the need for proper business ethics and etiquette. Interesting ethical issues of great concern to society have been raised. Conflicts often arise between what is the law and what many feel is morally right. $$$

Entrepreneurship, 3rd Edition
Ely, Berns, and Popo Glencoe
Reflects current practices and trends through use of real-life applications and examples from successful business people. It offers competency-based instruction to guide students through the steps of developing a business plan for a new small business. $

Entrepreneurs for the Future
Teaching Aids Inc.
Brings the exotic sounding word down to the student level—exploring the many possibilities open to people at all levels of employment. Introduces the basics of getting started with that one great idea, acquiring start-up money, pitfalls of cash flow, managing people, marketing strategies, etc. $$$$

Entrepreneurship: The World of Small Business
Sarah Riehm West
This highly motivational, activity-filled text will capture the students' imaginations and hold their interest as they are immersed in the entrepreneurship experience: devising business and marketing plans, conceptualizing operations, developing several types of advertising, etc. $

Introduction to Business: Our Business and Economic World
Betty Brown, John Clow Glencoe
Contains economic and business concepts that will help prepare students to make decisions as wage earners, consumers, and citizens in a market economy. Comprehensive program combines explanations of business and economic concepts with practical applications of those concepts. $

Introduction to Business
Teaching Aids Inc.
Introduces the language of business to cover the basic terms students need to master. Students are led behind the scenes of a dynamic manufacturing company. This highly organized video will entertain your students as well as teach them the basics in the areas of accounting, production, etc. $$$$

Money Management
PSI Associates Regents/Prentice Hall
A basic handbook on dollars and sense to help students practice the skills needed to fill out tax forms. $

Risks and Rewards of Entrepreneurship
M. Catherine Ashmore EMC Publishing
What does it take to become an entrepreneur? This outstanding program tackles this challenging question with material that is as stimulating as it is practical. $

Management

Reference Books

Effective Business Psychology, 3rd Edition
Andrew J. DuBrin Regents/Prentice Hall
Text helps students develop proficiency in such interpersonal skills as how to motivate people, how to criticize others constructively, and much more. It discusses practical intelligence and cross-cultural factors in work relationships. $$

Human Relations for Career and Personal Success, 3rd Edition
Andrew DuBrin Regents/Prentice Hall
Text illustrates applications of human relations skill though numerous case examples. It includes new topics such as the role of motives and needs in self-motivation, wellness, employment and drug testing, and more. It reflects the major issues in human relations. $$

Human Relations In Industry: People at Work
Jayne P. Crolley Regents/Prentice Hall
$$

Office Procedures and Management, 5th Edition
Moon & Cox Delmar
$$

Small Business Management, 4th Edition
Hubbard & Hailes Delmar
$

Supervision: Techniques and New Dimensions
Alfred W. Travers Regents/Prentice Hall
Text explores broad concepts and overall strategies for supervisory success. It offers solid, practical tips and techniques on how to plan and organize, motivate and lead, interview and train, and more. $$

Supervision: The Art of Management, 3rd Edition
Frunzi and Halloran Regents/Prentice Hall
$$

Videos

I'm Tired of a Messy Desk!
Teaching Aids Inc.
This video will help you and your viewers organize your desks for maximum use of space. Offers concrete tips on increasing personal work space efficiency. Common desk items which can break the flow of concentration are presented such as where to position personal items. $$$$

Software—Apple

Time Management...A Student's Guide
Teaching Aids Inc.
This interactive tool assesses the organizational and time management skills of the student and supports the development of a personalized time management program with graduation as the ultimate goal. $$$

Other

The School Planner: A Time Management Program
de Anda and Vivell South-Western
Learn to budget time wisely with the aid of both an instruction book and a consumable planner. $

Texts

Administrative Office Management: An Introduction, 5th Edition
Zane K. Quible Regents/Prentice Hall
This very readable text incorporates the most significant changes affecting today's administrative office in the areas of technology and human resources. Students can quickly and thoroughly grasp the essentials of administrative office management. $

Applied Human Relations: An Organizational Approach, 4th Edition
Benton and Halloran Regents/Prentice Hall
Text examines organizational values such as ethics, commitment, honesty, and integrity. It offers a reexamination of scientific management and other outdated strategies and explores areas such as barriers to communication. $

Career Development: Taking Charge of Your Career, 2nd Edition
Monica E. Breidenbach Regents/Prentice Hall
Provides a systematic, practical method for analyzing skills and talents—focusing on developing a career goal, a functional resume, and a workable action plan for the marketplace. Discusses self-analysis, tools development, market analysis, interviewing techniques, future career planning and more. $

Effective Business Psychology, 3rd Edition
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Text helps students develop proficiency in such interpersonal skills as how to motivate people, how to criticize others constructively, and much more. It discusses practical intelligence and cross-cultural factors in work relationships. $$

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Text illustrates applications of human relations skill though numerous case examples. It includes new topics such as the role of motives and needs in self-motivation, wellness, employment and drug testing, and more. It reflects the major issues in human relations. $$

Human Relations: A Job Oriented Approach, 5th Edition
Andrew DuBrin Regents/Prentice Hall
$$

Human Relations in Industry: People at Work
Jayne P. Crolley Regents/Prentice Hall
$$

Personality Development

Texts

Applied Human Relations: An Organizational Approach, 4th Edition
Benton and Halloran Regents/Prentice Hall
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Bridges To Success: A Life Skills Series
PSI Associates, Inc. Regents/Prentice Hall
Designed to help readers in transition bridge the gap between dependence and independence. $

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Exploring Careers In Business
Instructional Materials
Covers career exploration, personal qualities for the work world, sources of information, occupational requirements and developing a career plan. $

Human Relations: A Job Oriented Approach, 5th Edition
Andrew DuBrin Regents/Prentice Hall
$$

Independent Living
PSI Associates, Inc. Regents/Prentice Hall
Provides a simple guide to daily living that explains the basics of personal hygiene, nutrition, managing leisure time, finding a place to live, and living on a budget. Starts with a chapter on self-respect, emphasizing that a sense of self-worth is essential to an independent life. $

Personality On the Job: Why People Work
Teaching Aids Inc.
How personality effects work habits is the emphasis of this program. It looks at how to motivate different personality themes in the work environment and discover why some jobs are more suited to certain personalities. (15 minutes) $$$

Successful Self-Management
MarkED
An excellent guide for achieving success by taking charge of your personal and professional life. This program provides a blueprint for you to assist your students as they evaluate their progress on the road to success. $$$$

Text Workbooks

Bridges To Success: A Life Skills Series
PSI Associates, Inc. Regents/Prentice Hall
Designed to help readers in transition bridge the gap between dependence and independence
$

Creativity in Business MarkED
$

Developing Positive Assertiveness MarkED
$

Memory Skills in Business MarkED
$

Personal Skills
Chamberlain and Eubanks • Glencoe
Older students with poor reading skills can learn about the relationship skills they'll need with this lively easy-to-read text. It focuses on basic skills and attitudes necessary for good relationships with family, friends, and coworkers. Text has more than 100 two-color photos and drawings. $

Personal Time Management
MarkED
$

Successful Self-Management: Personal Effectiveness
MarkED
$

Thinking Skills for Success
Dr. Edward deBono EMC Publishing
The program you need to truly prepare your students for the decisions they must make in an increasingly complex world. It will help your students learn, develop, and practice their thinking skills within the context of their practical applications.
$

Working at Human Relations, 2nd Edition

Fruehling and Oldham Paradigm

Gives students an understanding of the connection between human relations and success or failure in finding a satisfying working life. Whether or not your students have much work experience they will be able to apply the ideas and concepts in this text workbook to their own life experiences. $

Videos

It's Not Just Courtesy - It's The Law""

Teaching Aids Inc.

Demonstrates how to handle unwelcome behavior, including sexual innuendoes, remarks, unwanted physical contact or demands for sexual favors in return for employment advancement. Candid vignettes help students understand the impact sexual harassment can have on individuals and organizations. $$$

Constructive Communications

Teaching Aids Inc.

This program introduces step-by-step procedures for making verbal communication EASY. Know the (E)ffect you want to achieve. Understand your (A)udience. Know your (S)ubject matter. Know how you can best present (Y)ourself. $$$$

Easy Business

Teaching Aids Inc.

A Hal Roach style comedy. Shot in the 1920's style of film making. This program follows the adventures of two slapstick characters remodeling a ramshackle house. Use this video to show what happens with good intentions, lack of communications, and the inability to get along. $$$$

Everyone a Problem Solver

Teaching Aids Inc.

The ability to solve problems could be the most important skill your students can bring to their first job, and all the other jobs they'll have. $$$$

First Time Out

Teaching Aids Inc.

Entertaining and realistic drama about the problems young adults often face when living away from home for the first time. Covers topics like responsibilities and expenses that come with leasing an apartment, need for a budget, importance of choosing mature roommates, etc. $$$$

I'm Tired of a Messy Desk!

Teaching Aids Inc.

This video will help you and your viewers organize your desks for maximum use of space. Offers concrete tips on increasing personal work space efficiency. Common desk items which can break the flow of concentration are presented such as where to position personal items. $$$$

Locomotion

Teaching Aids Inc.

A tale of a spirited locomotive and caboose who are suddenly faced with a major obstacle while on their way to the station. They solve their dilemma by overcoming near impossible odds. Use this video to show leadership, problem solving, and creative solutions. $$$$

Negotiating...For Whatever You Want

Teaching Aids Inc.

An intense, informative discussion of the most successful negotiating techniques for use in your personal life. Applicable to everyday situations, this entertaining and educational program explains how to identify the issues in personal negotiations, and offers insights on how to test assumptions. $$

Personal Goals: Your Path to Success

Teaching Aids Inc.

This program presents several methods for planning and achieving goals. By examining important personal qualities necessary for achieving success, the student is asked to reflect on past accomplishments and failures, assess the present for interests and abilities, and plan for the future. $$$$

Risk Taking or Evolve or Dissolve

Teaching Aids Inc.

Covers how growth involves risk, that risks need to be motivated by wisdom and skill, different types of risk taking, the do's and don'ts of risk taking, and how one perceives risk taking. $$$

Sexual Harassment: The Other Point Of View

Teaching Aids Inc.

A lively video that helps young people understand exactly what sexual harassment is in a series of dramatic vignettes. $$$

Step 1: Be Good To Yourself

Teaching Aids Inc.

Covers concepts such as the importance of positive thoughts, taking responsibility for one's behavior, having the right to dream, and making choices to change one's life for the better. $$$

Step 2: Frog Kissing Or Be Good to Others

Teaching Aids Inc.

Demonstrates how by treating others fairly, one learns to treat oneself better. Concepts include looking beyond a person's physical appearance to learning how to reach out to others. $$$

Step 3: Empowerment Or You Are an Eagle Not a Chicken

Teaching Aids Inc.

Teaches students to understand their power, keep their power, and use their power wisely. $$$

Step 4: Belongingness Or Do We Have As Much Sense As a Goose?

Teaching Aids Inc.

Covers functional and dysfunctional groups, conflict management and connecting with others. $$$

Step 5: Models, Mentors, and Heroes Or The Helping Hand

Teaching Aids Inc.

Investigates the pros and cons of hero worship. $$

Step 7: It's Not Easy Being Green

Teaching Aids Inc.

Makes students aware of their own uniqueness and teaches them that uniqueness is a gift not a curse. $$$

Step 8: Just Do It

Teaching Aids Inc.

Stresses the importance of productivity and presents a six-part plan to accomplish plans and dreams. $$$

Step 9: Play and Laughter Or Chill Out

Teaching Aids Inc.

Stresses the importance of play and laughter in teen's lives and debunks some of the myths surrounding these two concepts. $$$

Successful Self-Management

MarkED

An excellent guide for achieving success by taking charge of your personal and professional life. This program provides a blueprint for you to assist your students as they evaluate their progress on the road to success. $$$$

Ta Da: A Series On Self-Esteem—Introduction

Teaching Aids Inc.

Viewing the Pep Rally familiarizes teens with the nine steps of the TA-DA Experience and explains how the programs will teach them to raise their "I Can" scores $$

Why Reading Is Important

Teaching Aids Inc.

Through the use of concrete examples of problems students may encounter in their everyday lives, this program demonstrates clearly that self esteem, work success and life satisfaction depend on reading skills. It answers a question often asked by poor readers: why do I have to read? $$$$

Film

Body Language

Learning Seed

Most personal communication is non-verbal. A course in communication is not complete without a study of how we use gestures, postures, eye movements, and personal space.

$$$

Safety

Videos

Avoiding Computer Strains and Pains

Teaching Aids Inc.

Reported cases of strains and injuries, ranging from back pain to headaches and eye irritation, have more than doubled over the past two years. This program addresses the most current, safe methods of working with computers. Accompanied by a booklet which covers key points of the presentation.

$$$$

Office Safety: It's a Jungle In There

Teaching Aids Inc.

Working in an office can be dangerous to your health. This video teaches common sense safety procedures. Students will learn how to prevent the causes of accidents before they happen: frayed carpet edges, cluttered or slippery floors, open file drawers, overloaded electrical outlets, etc. $$$

Ergonomics: Humanizing the Automated Office

Joyce and Wallersteiner — Teaching Aids

The first text for the educational market that deals with ergonomics and the balancing of productivity with employee health and comfort in the automated office. $

Leadership

Texts

Leadership Development, Second Edition

George Shinn — Glencoe

Helps students develop the personal attributes and social skills needed to succeed in the business world. Goal setting, personal appearance, memory, creativity, management, and employment are among the important topics discussed. $

Videos

Leadership Skills

Teaching Aids Inc.

Aaron Alejandro, former Texas State FFA President and accomplished speaker, conducts a fast-paced workshop designed to develop and hone leadership skills. Qualities such as communication skills, innovativeness, decisiveness, accountability, responsibility, self-confidence and the part they play are covered. $$$

Parliamentary Procedure I

Teaching Aids Inc.

Includes explanations and examples of the following motions: main motion, lay on the table, previous question, refer to a committee, amend, point of order, and appeal from the decision of the chair. The purpose, pertinent facts and an example of each motion is provided. $$$$

Parliamentary Procedure II

Teaching Aids Inc.

Includes explanations and examples of the following motions: suspend standing rules, division of the assembly, nominations and elections, parliamentary inquiry, leave to withdraw a motion, adjourn, take from the table, reconsider, recind, and opening and closing ceremonies. $$$

Tough-Minded Leadership

Teaching Aids Inc.

Provides fuel for decisiveness. At a time when self confidence and self-esteem are desperately needed, this video provides techniques and tools. In an era of counterproductive self-preoccupation, it provides the lift and pull of transcendent goals, visions and dreams. $$

Software—MS-DOS, Apple

Conduct of Meetings

Teaching Aids Inc.

Contains true/false and multiple choice questions. Covers the procedure of conducting meetings, the duties and responsibilities of officers and basic parliamentary procedure for beginning members are covered. Excellent for drilling newly elected officers. (Revised 1990) $$$ MS, AP

Parliamentary Procedure I

Teaching Aids Inc.

Table of motions—drills students on the categories of motions and their characteristics including second required, debatable, amendable, and vote required. Disk also has 25 multiple choice and 75 true/false questions. Excellent for preparing for student contests! $$$ AP

Parliamentary Procedure II

Teaching Aids Inc.

Designed for advanced study, this disk contains 280 questions (one-half multiple choice and one-half true/false) questions. Excellent for preparing for student contests!

$$$ AP

Curriculum and Instructional Materials Cnt.
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and Technical Education
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FAX: 1-405-743-5154

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Using the Matrices

The following matrices correlate the Academic Courses' Essential Elements, the TAAS objectives, and specific competencies for all of the office education curriculum areas. Social studies and science TAAS objectives have been included on the matrices since these areas will be included on the test beginning in 1993. These matrices are simply a starting point for identifying integration possibilities and can be used as a guideline for your own use of the materials.

The matrices give just one interpretation of correlations among these areas. The academic essential elements listed reflect a broad-based interpretation. The science area includes computers and general technology relating to office education. Many times a competency was placed in a specific basic skills area, but was not reflected in the TAAS objectives and vice versa. This seeming inconsistency reflects the way the academic essential element or TAAS objective reads and was interpreted in conjunction with activities from the curriculum.

Academic Courses' Essential Elements

English Language Arts: 75.61

1.	(b)(4)(A)	Expand vocabulary
2.	(c)(4)(F)	Follow complex directions
3.	(d)(1)(A)	Use the composing process to plan and generate writing
4.	(d)(4)(G)	Use various reference materials
5.	(e)(2)(D)	Use oral language in a variety of situations

Mathematics: 75.63

1.	(a)(1)(A)	Identify and use appropriate units of measure
2.	(a)(1)(B)	Solve problems involving measures
3.	(a)(1)(C)	Apply ratio and proportion
4.	(a)(3)(A)	Use the operations of addition, subtraction, multiplication, and division of whole numbers and integers in problem-solving situations
5.	(a)(3)(B)	Use fractions and their relative value
6.	(a)(3)(C)	Use the operations of addition, subtraction, multiplication, and division of fractions and decimals in problem-solving situations
7.	(a)(4)(A)	Compute income and wages
8.	(a)(4)(B)	Interpret deductions on paycheck stub
9.	(a)(4)(D)	Make budget
10.	(a)(4)(E)	Open and maintaining checking and savings account
11.	(a)(5)(C)	Measure
12.	(a)(5)(F)	Use graphs
13.	(a)(5)(G)	Use probability and statistics
14.	(a)(5)(H)	Work with personal finance
15.	(a)(6)(A)	Use counting methods and factorials
16.	(a)(6)(E)	Make predictions
17.	(b)(1)(A)	Interpret charts, tables, graphs and maps
18.	(b)(1)(C)	Determine wages and deductions from given information
19.	(b)(2)(A)	Find cost of: i. housing ii. food iii. transportation iv. clothing v. insurance
20.	(b)(2)(B)	Make decisions by comparing different types of the cost
21.	(b)(2)(C)	Find discounts, sales, rebates, coupons, etc.
22.	(b)(4)(A)	Investigate the use of credit cards and charge accounts
23.	(b)(4)(B)	Study options for loans
24.	(b)(5)(A)	Use banking forms

25.	(b)(5)(B)	Compare advantages and disadvantages of investments
26.	(b)(7)(A)	Calculate wages and deductions
27.	(b)(7)(B)	Develop a personal budget
28.	(c)(3)(B)	Use ratio and proportion
29.	(c)(3)(C)	Find percent and percentage
30.	(c)(3)(D)	Determine needs related to personal finance
31.	(c)(4)(C)	Use metric and customary units
32.	(c)(4)(D)	Find distance, perimeter, circumference, area, surface area and volume
33.	(d)(1)(A)	Develop the concept of measuring using measuring instruments
34.	(d)(1)(B)	Estimate measures
35.	(d)(4)(B)	Demonstrate a knowledge of similarity and similar figures
36.	(d)(4)(D)	Apply similarity to maps and scale drawings
37.	(d)(6)(C)	Find distance between points
38.	(d)(9)(B)	Compute circumference and area of circles
39.	(d)(10)(D)	Apply the formulas to practical problems related to capacity
40.	(g)(2)(B)	Understand symmetry
41.	(g)(2)(C)	Find area and volume
42.	(g)(3)(A)	Determine distance and betweeness
43.	(g)(3)(B)	Measure angles
44.	(i)(1)(A)	Understand aspects of free enterprise system and its benefits
45.	(i)(1)(B)	Investigate wages and deductions
46.	(i)(1)(C)	Investigate benefits offered by companies, unions, and organizations
47.	(i)(1)(D)	Investigate Social Security and Income Tax
48.	(i)(2)(A)	Understand credit financing
49.	(i)(2)(C)	Investigate local bank services
50.	(i)(2)(E)	Investigate different types of loans
51.	(i)(2)(F)	Investigate types of institutions that offer loans
52.	(i)(3)(A)	Food, shelter, clothes
53.	(i)(3)(B)	Transportation
54.	(i)(3)(C)	Insurance
55.	(i)(3)(D)	Medical and dental expenses
56.	(i)(3)(E)	Education
57.	(i)(3)(F)	Retirement and annuities
58.	(i)(3)(G)	Miscellaneous
59.	(i)(4)(A)	Make informed consumer decisions
60.	(i)(4)(B)	Practice sound money management

Science: 75.64

1.	(b)(2)(A)	Observe chemical reactions
2.	(b)(4)(A)	Describe chemical processes
3.	(b)(4)(B)	Explain meaningful arrangements of chemical information
4.	(b)(5)(A)	Measure chemical quantities
5.	(c)(5)(A)	Measure physical quantities
6.	(c)(7)(B)	Compare the functions of electronic circuits
7.	(c)(7)(C)	Compare the electrical efficiency of appliances
8.	(c)(10)(A)	Apply principles of physics to an investigation

9.	(d)(2)(A)	Observe physical and chemical properties of matter
10.	(d)(2)(B)	Observe the effects of forces on matter
11.	(d)(2)(C)	Explore magnetic and electrical interactions
12.	(d)(9)(B)	Manage an experimental apparatus to test a physical science hypothesis
13.	(d)(10)(A)	Finalyze the use of chemicals in everyday activities of the home
14.	(f) (1) (A)	Demonstrate the safe use of laboratory chemicals and equipment
15.	(g)(5)(B)	Plot data on graphs and other displays
16.	(h)(7)(A)	Compare physical interactions under varied conditions
17.	(h)(7)(B)	Evaluate the electrical efficiency of machines
18.	(i)(2)(B)	Examine earth materials (construction)
19.	(l)	Marine Science (the EE's of our few marine related programs should be compared to those in this course)
20.	(n)(2)(B)	Study safety hazards encountered by students and methods of eliminating the hazards
21.	(n)(4)(A)	Communicate laboratory and safety directions
22.	(p)(l)(E)	Develop skills in using materials and devices in a manner that minimizes danger to self and to society and maintains an acceptable level of erosion of the environment (safety practices, waste disposal)
23.	(p)(2)(A)	Organize thought process to accomplish goals (applications of electronics, photography)
24.	(p)(2)(E)	Adjust constructively to variations in needs resulting from individual differences that exist both within and among cultures in a healthy society
25.	(p)(4)(D)	Consider the consequences of personal actions (safety, chemical disposal)
26.	(p)(4)(D)	Develop a sense of personal worth in doing things for pleasure as well as in doing for others (hobbies)
Note:		75.64(Q) and (R) relating to aerospace-aviation should be compared to T & I Aviation related course EE's.
	(q)(1)(B)	Demonstrate investigative procedures and techniques
	(q)(4)(A)	Describe emergency procedures
	(r)(7)(C)	Analyze radio navigation systems (will be in some electronics or media technology courses)

Social Studies: 75.48

1.	(a)(l)(A)	Respect beliefs of other individuals
2.	(a)(l)(D)	Recognize that individuals must accept the consequences of their decisions
3.	(a)(2)(A)	Respect the principles that underlie the Texas and the United States Constitutions, the Bill of Rights, and the Declaration of Independence
4.	(a)(2)(C)	Value open-mindedness, tolerance of differing opinions, and civic participation as important aspects of democratic behavior
5.	(a)(2)(D)	Respect the laws of one's society and work responsibly to change laws that one judges to be unjust
6.	(a) (2) (E)	Understand the importance of individuals participation in civic affairs
7.	(a)(2)(G)	Recognize the value of compromise in the democratic process
8.	(a)(2)(J)	Support the democratic processes of the republican form of government
9.	(a)(2)(K)	Support the basic values of American society (e.g., justice, responsibilities, freedom, respect for the law, diversity, privacy, private property rights, free enterprise, and voluntary exchange)

10.	(a)(2)(L)	Support the rules and laws of one's school, community, state, and nation
11.	(a)(3)(B)	Support the role of profit in the American market system
12.	(a)(3)(E)	Recognize that citizens, through legal political activities, can influence economic decisions made by government
13.	(a)(4)(A)	Locate and gather information
14.	(a)(4)(B)	Observe for detail
15.	(a)(4)(C)	Translate information from one medium to another
16.	(a)(4)(D)	Organize and express ideas in written form
17.	(a)(4)(E)	Distinguish fact from opinion
18.	(a)(4)(F)	Analyze information
19.	(a)(4)(G)	Draw conclusions
20.	(a)(4)(H)	Synthesize information
21.	(a)(4)(J)	Use problem-solving skills

Social Studies: 75.68

1.	(b)(3)(D)	Explain the development and importance of new business and labor organizations
2.	(i)(3)(A)	Analyze the development of self concept
3.	(i)(3)(C)	Establish individual long- and short-range goals
4.	(k)(2)(D)	Undertake personal leadership in groups
5.	(k)(2)(E)	Accept leadership of others

Texas Assessment of Academic Skills
Instructional Targets
Language Arts (LAR)

DOMAIN: **Reading Comprehension**

Objective 1: The student will determine the meaning of words in a variety of written texts.

Objective 2: The student will identify supporting ideas in a variety of written texts.

Objective 3: The student will summarize a variety of written texts.

Objective 4: The student will perceive relationships and recognize outcomes in a variety of written texts.

Objective 5: The student will analyze information in a variety of written texts in order to make inferences and generalizations.

Objective 6: The student will recognize points of view, propaganda, and/or statements of fact and nonfact in a variety of written texts.

Texas Assessment of Academic Skills
Instructional Targets
Mathematics (Math)

DOMAIN: Concepts

Objective 1: The student will demonstrate an understanding of number concepts.

Objective 2: The student will demonstrate an understanding of mathematical relations, functions, and other algebraic concepts.

Objective 3: The student will demonstrate an understanding of geometric properties and relationships.

Objective 4: The student will demonstrate an understanding of measurement concepts using metric and customary units.

Objective 5: The student will demonstrate an understanding of probability and statistics.

DOMAIN: Operations

Objective 6: The student will use the operation of addition to solve problems.

Objective 7: The student will use the operation of subtraction to solve problems.

Objective 8: The student will use the operation of multiplication to solve problems.

Objective 9: The student will use the operation of division to solve problems.

DOMAIN: Problem Solving

Objective 10: The student will estimate solutions to a problem situation.

Objective 11: The student will determine solution strategies and will analyze or solve problems.

Objective 12: The student will express or solve problems using mathematical representation.

Objective 13: The student will evaluate the reasonableness of a solution to a problem situation.

Texas Assessment of Academic Skills
Instructional Targets
Written Communication (LAW)

DOMAIN:	**Written Communication**
Objective 1:	The student will respond appropriately in a written composition to the purpose/audience specified in a given topic.
Objective 2:	The student will organize ideas in a written composition on a given topic.
Objective 3:	The student will demonstrate control of the English language in a written composition on a given topic.
Objective 4:	The student will generate a written composition that develops/supports/elaborates the central idea stated in a given topic.
Objective 5:	The student will recognize appropriate sentence construction within the context of a written passage.
Objective 6:	The student will recognize appropriate English usage within the context of a written passage.
Objective 7:	The student will recognize appropriate spelling, capitalization, and punctuation within the context of a written passage.

Texas Assessment of Academic Skills
Instructional Targets
Science (Sci)

DOMAIN:	**Science**
Objective 1:	The student will acquire scientific data and/or information.
Objective 2:	The student will sequence, order, and/or classify scientific data and/or information.
Objective 3:	The student will communicate scientific data and/or information.
Objective 4:	The student will interpret scientific data and/or information.
Objective 5:	The student will make inferences from generalized statements and/or make predictions using scientific data and/or information.
Objective 6:	The student will identify a problem, formulate a hypothesis, and design and conduct a scientific investigation.
Objective 7:	The student will draw conclusions about the process(es) and/or outcome(s) of a scientific investigation.
Objective 8:	The student will relate and/or apply scientific and technological information to daily life.

Texas Assessment of Academic Skills
Instructional Targets
Social Studies (SS)

DOMAIN:	**Social Studies**
Objective 1:	The student will identify civic values and the rights and responsibilities of American citizenship.
Objective 2:	The student will identify American and other economic systems.
Objective 3:	The student will identify American and other political systems.
Objective 4:	The student will identify geographical concepts and information.
Objective 5:	The student will identify historical concepts and information.
Objective 6:	The student will identify sociological and cultural factors that affect human behavior.
Objective 7:	The student will interpret social studies data.
Objective 8:	The student will analyze relationships in social studies.
Objective 9:	The student will make generalizations about and draw inferences and conclusions from social studies information.
Objective 10:	The student will use problem-solving and decision-making skills in a social studies context.

Competency Checklist

Microcomputer Applications

(4= Mastery—1=Non Mastery)

COMPETENCIES

I. Introduction to Microcomputers

1. Introduction to the Course

NONE

2. Microcomputer Systems

4 3 2 1 1. Use commonly accepted terminology related to data processing with microcomputers.
4 3 2 1 2. Trace the evolution of the personal computer in chronological order.
4 3 2 1 3. Describe each computer generation including the current generation.
4 3 2 1 4. Discuss the types of computer systems.
4 3 2 1 5. Categorize hardware devices by function.
4 3 2 1 6. Identify and describe the most widely used business systems.

3. Basic Microcomputer Operations

4 3 2 1 1. Use commonly accepted terms related to data processing operations with microcomputers.
4 3 2 1 2. Perform a "cold boot" and a "warm boot" using a standard operating system on a microcomputer.
4 3 2 1 3. Use standard commands to perform disk management, including preparing a data disk for use, copying and deleting a file, and displaying the disk directory.
4 3 2 1 4. Discuss types of software including programming languages, utitity packages, and application software.

4. Social Implications

4 3 2 1 1. Define terminology related to computer crime, computer users, and new computer devices and techniques.
4 3 2 1 2. Identify the major issues and technological developments related to computers and society.
4 3 2 1 3. Describe ethical and legal issues that have arisen as a result of the computer revolution.
4 3 2 1 4. Identify privacy issues involved with electronic data storage.
4 3 2 1 5. Explain reasons for concern about the reliability of computer systems.

COMPETENCIES

II. Word Processing

1. Introduction to Word Processing

4 3 2 1 1. Use word processing terminology.
4 3 2 1 2. Describe the steps in the document cycle.
4 3 2 1 3. Categorize the production features of word processing software.
4 3 2 1 4. Demonstrate the ability to move around documents, enter data, save a file, and edit documents.

2. Document Production Procedures

4 3 2 1 1. Classify common documents by type.
4 3 2 1 2. Format and edit documents.
4 3 2 1 3. Prepare mailable documents using a word processing program.

III. Information Management

1. Introduction to Information Management

4 3 2 1 1. Define terms related to information management.
4 3 2 1 2. Discuss the concepts of information management.
4 3 2 1 3. Explain the typical uses of microcomputer-based information management.
4 3 2 1 4. Enter and manipulate data in a database.

2. Information Management Procedures

4 3 2 1 1. Design and construct a database.
4 3 2 1 2. Access information using search and sort commands with logical operations such as and, or, and not and relate the commands to particular applications.
4 3 2 1 3. Prepare and print reports.

IV. Electronic Spreadsheets

1. Introduction to Spreadsheets

4 3 2 1 1. Use terminology associated with popular spreadsheet programs.
4 3 2 1 2. Discuss the purposes and uses for the spreadsheet.
4 3 2 1 3. Describe the form and components of a spreadsheet.
4 3 2 1 4. Demonstrate functions and procedures available with most spreadsheet programs to enter data into a template.

COMPETENCIES

2. Spreadsheet Procedures

4 3 2 1 1. Retrieve and modify data in an electronic spreadsheet and carry out the necessary steps to report the results.

4 3 2 1 2. Analyze a simple problem that is appropriate for spreadsheet solution, and design a template that can be used to solve the problem.

4 3 2 1 3. Report the results of processing with an electronic spreadsheet in both tabular and graphic form.

V. Information Processing Tools

1. Telecommunications

4 3 2 1 1. Use terminology common to telecommunications.

4 3 2 1 2. Describe procedures for communicating with electronic bulletin boards, online information services, and facsimile transmissions.

4 3 2 1 3. Explain the concept of electronic mail.

2. Networking

4 3 2 1 1. Use terminology associated with networking.

4 3 2 1 2. Identify configurations for local area networks.

4 3 2 1 3. Describe components common to networks.

4 3 2 1 4. Discuss advantages and disadvantages of networking.

COMPETENCIES

3. Graphic Layout and Design

4 3 2 1 1. Identify terminology related to layout and design.

4 3 2 1 2. Use graphic layout and design techniques to prepare a thumbnail sketch.

4 3 2 1 3. Create a rough page layout.

4. Desktop Publishing

4 3 2 1 1. Identify and use desktop publishing terminology.

4 3 2 1 2. Describe the components of a desktop publishing system.

4 3 2 1 3. Discuss the concepts of desktop publishing.

4 3 2 1 4. Demonstrate desktop publishing tools and procedures for producing a simple publication.

VI. Closure

1. Integration of Applications

4 3 2 1 1. Explain the meaning of integrated software.

2. Perform integration applications for:

4 3 2 1 a. Mail merge from a database into word processing.

4 3 2 1 b. Spreadsheet table information into word processing.

4 3 2 1 c. Graphics and text to be imported into a desktop publishing program

2. Closure for Microcomputer Applications

NONE

Microcomputer Applications Integration Matrix

Section 1, Unit 2

Competency	Math (75.63)	Science (75.64)	Language Arts (75.61)	Social Studies (75.48)	TAAS Objectives
1			(b)(4)(A)		LAR; Obj. 1
2				(a)(4)(A)(C)(E)(F)(H)	LAR; Obj. 3, 4, 5, 6 SS; Obj. 5, 7, 8 LAW; Obj. 1, 2
3		(c)(7)(C) (h)(7)(B)	(d)(4)(G)	(a)(4)(A)(D)(H)	LAR; Obj. 2, 3, 5, 6 LAR; Obj. 1, 2, 3 Sci; Obj. 2, 8 SS; Obj. 5
4		(c)(7)(B)(C) (h)(7)(B)	(d)(4)(G)	(a)(4)(A)(B)(D)(H)	LAR; Obj. 3, 5 LAW; Obj. 1, 2 Sci; Obj. 1, 3 SS; Obj. 7
5		(c)(7)(B)	(d)(4)(G)	(a)(4)(A)(F)(H)(J)	LAR; Obj. 4, 5 LAW; Obj. 1, 2 Sci; Obj. 2, 8 SS; Obj. 5
6		(c)(7)(B)(C) (h)(7)(B)	(d)(4)(G)	(a)(4)(A)(F)(G)(H)	LAR; Obj. 3, 5 LAW; Obj. 2, 4 Sci; Obj. 1, 2, 8 SS; Obj. 5, 6

Microcomputer Applications Integration Matrix

Section 1, Unit 3

Competency	Math (75.63)	Science (75.64)	Language Arts (75.61)	Social Studies (75.48)	TAAS Objectives
1			(b)(4)(A)		LAR; Obj. 1
2		(c)(7)(B) (d)(2)(C) (h)(7)(B) (n)(2)(B) (p)(1)(E) (p)(2)(A) (p)(4)(D)	(c)(4)(F)	(a)(1)(D) (a)(4)(B)(C)(J)	LAR; Obj. 4 Sci; Obj. 4, 8
3		(c)(7)(B) (d)(2)(C) (h)(7)(B) (n)(2)(B) (p)(1)(E) (p)(2)(A) (p)(4)(D)	(c)(4)(F)	(a)(1)(D) (a)(4)(B)(C)(J)	LAR; Obj. 4 Sci; Obj. 4, 8
4	(a)(3)(A)(C) (b)(2)(B) (i)(1)(A) (i)(4)(A)	(p)(1)(E) (p)(2)(A)(E)	(d)(4)(G)	(a)(1)(A) (a)(2)(C)(K)(L) (a)(3)(B) (a)(4)(A)(B)(B)(F)(G)(H)(J)	LAR; Obj. 4, 5 LAW; Obj. 1, 2, 3, 4 Math; Obj. 1, 2, 11 Sci; Obj. 1, 3, 5, 8 SS; Obj. 2, 6, 10

Microcomputer Applications Integration Matrix
Section 1, Unit 4

Competency	Math (75.63)	Science (75.64)	Language Arts (75.61)	Social Studies (75.48)	TAAS Objectives
1			(b)(4)(A)		LAR; Obj. 1
2		(c)(7)(B)(C) (h)(7)(B)	(b)(4)(G)	(a)(2)(K) (a)(3)(B) (a)(4)(A)(F)(H)	LAR; Obj. 5 LAW; Obj. 1, 2, 3 Sci; Obj. 1, 2, 3, 4, 8 SS; Obj. 5
3		(p)(1)(E) (p)(2)(E) (p)(4)(D)	(c)(4)(F) (d)(4)(G)	(a)(1)(A)(D) (a)(2)(A)(C)(K)(L) (a)(3)(E) (a)(4)(A)(E)(F)(G)(H)	LAR; Obj. 2, 3, 4, 5, 6 LAW; Obj. 1, 2, 3, 4 Sci; Obj. 1, 2, 3, 4, 8 SS; Obj. 1, 3, 5, 6, 9
4		(c)(7)(B)(C) (p)(1)(E)	(d)(4)(G)	(a)(1)(A)(D) (a)(2)(A)(K)(L) (a)(3)(E) (a)(4)(A)(F)(G)(H)	LAR; Obj. 2, 3, 5, 6 LAW; Obj. 1, 2, 3 Sci; Obj. 1, 4, 5, 8 SS; Obj. 1, 3, 6, 9
5		(c)(7)(C) (d)(2)(B)(C) (f)(1)(A) (p)(1)(E) (p)(4)(D)	(c)(4)(F) (d)(4)(G)	(a)(1)(A) (a)(4)(A)(B)(D)(E)(F)(G)(H)	LAR; Obj. 2, 3, 4, 5, 6 LAW; Obj. 1, 2, 3 Sci; Obj. 1, 2, 4, 8 SS; Obj. 5, 6

Microcomputer Applications Integration Matrix

Section 2, Unit 1

Competency	Math (75.63)	Science (75.64)	Language Arts (75.61)	Social Studies (75.48)	TAAS Objectives
1			(b)(4)(A)		LAR; Obj. 1
2		(p)(1)(E) (p)(2)(A) (p)(4)(D)	(c)(4)(F) (d)(4)(G)	(a)(1)(D) (a)(2)(K) (a)(4)(A)(B)(C)(D)(F)(H)	LAR; Obj. 3, 5 LAW; Obj. 1, 2, 3, 4 Sci; Obj. 2, 8 SS; Obj. 10
3		(d)(2)(B) (p)(1)(E) (p)(2)(E)	(c)(4)(F) (d)(4)(G)	(a)(1)(A)(D) (a)(4)(A)(B)(D)(F)(G)(H)	LAR; Obj. 3, 5 LAW; Obj. 1, 2, 3, 4 Sci; Obj. 2, 8
4	(a)(1)(B)	(p)(1)(E) (p)(2)(A) (p)(4)(D)	(c)(4)(F) (d)(4)(G)	(a)(4)(F)(H)(J)	LAR; Obj. 3, 4, 5 LAW; Obj. 1, 2 Math; Obj. 1, 10, 11, 13 Sci; Obj. 2, 8

Microcomputer Applications Integration Matrix

Section 2, Unit 2

Competency	Math (75.63)	Science (75.64)	Language Arts (75.61)	Social Studies (75.48)	TAAS Objectives
1			(d)(4)(G)	(a)(4)(A)(B)(F)(H)(I)	LAR; Obj. 2, 5 LAW; Obj. 2 Sci; Obj. 2, 8
2	(a)(1)(A)(B) (a)(5)(C) (d)(1)(A)(B)	(p)(2)(A)	(c)(4)(F) (d)(4)(G)	(a)(4)(B)(F)(H)(J)	LAR; Obj. 5 LAW; Obj. 5, 6, 7 Math; Obj. 1, 10, 11, 12, 13 Sci; Obj. 8
3	(a)(1)(A)(B) (a)(5)(C) (d)(1)(A)(B)	(p)(2)(A)	(c)(4)(F) (d)(4)(G)	(a)(4)(B)(F)(H)(J)	LAR; Obj. 5 LAW; Obj. 5, 6, 7 Math; Obj. 1, 10, 11, 12, 13 Sci; Obj. 5

Microcomputer Applications Integration Matrix

Section 3, Unit 1

Competency	Math (75.63)	Science (75.64)	Language Arts (75.61)	Social Studies (75.48)	TAAS Objectives
1			(b)(4)(A)		LAR; Obj. 1
2		(c)(7)(B)(C) (h)(7)(B)	(b)(4)(G)	(a)(4)(A)(F)(G)(H)	LAR; Obj. 3, 5 LAW; Obj. 2, 4 Sci; Obj. 1, 2, 8 SS; Obj. 5, 6
3		(p)(2)(A)	(c)(4)(F) (d)(4)(G)	(a)(4)(A)(D)(F)(H)	LAR; Obj. 2, 3, 5 LAW; Obj. 1, 2, 3, 4 Math; Obj. 10, 11, 13 Sci; Obj. 6, 8 SS; Obj. 10
4	(a)(1)(A)(B) (a)(5)(C) (d)(1)(A)(B)	(p)(2)(A)	(c)(4)(F) (d)(4)(G)	(a)(4)(B)(F)(H)(J)	LAR; Obj. 5 LAW; Obj. 2 Math; Obj. 1, 10, 11, 13 Sci; Obj. 5

Microcomputer Applications Integration Matrix

Section 3, Unit 2

Competency	Math (75.63)	Science (75.64)	Language Arts (75.61)	Social Studies (75.48)	TAAS Objectives
1	(b)(2)(B)	(p)(2)(A)	(c)(4)(F)	(a)(4)(A)(B)(C)(H)(J)	LAR; Obj. 4, 5 LAW; Obj. 2 Math; Obj. 1, 10, 11, 13 Sci; Obj. 1, 2, 8 SS; Obj. 5, 10
2		(p)(2)(A) (p)(4)(D)	(c)(4)(F) (d)(4)(G)	(a)(4)(B)(C)(F)(H)(J)	LAR; Obj. 5 LAW; Obj. 2 Math; Obj. 2, 10, 11, 13 Sci; Obj. 2, 8 SS; Obj. 10
3		(p)(2)(A) (p)(4)(D)	(c)(4)(F) (d)(4)(G)	(a)(4)(B)(C)(F)(H)(J)	LAR; Obj. 5 LAW; Obj. 2 Math; Obj. 2, 10, 11, 13 Sci; Obj. 2, 8 SS; Obj. 10

Microcomputer Applications Integration Matrix

Section 4, Unit 1

Competency	Math (75.63)	Science (75.64)	Language Arts (75.61)	Social Studies (75.48)	TAAS Objectives
1			(b)(4)(A)		LAR; Obj. 1
2	(i)(1)(A)	(p)(2)(A)	(c)(4)(F)	(a)(4)(A)(F)(H)	LAR; Obj. 2, 3 LAW; Obj. 1, 2, 3, 4 Math; Obj. 1 Sci; Obj. 1, 2, 3
3			(d)(4)(G)	(a)(4)(D)(G)(H)(J)	LAR; Obj. 2, 3, 4 LAW; Obj. 1, 2, 3, 4 Math; Obj. 1, 2, 10, 11, 13 Sci; Obj. 8
4	(a)(3)(A)(C) (a)(6)(E) (c)(3)(C) (d)(10)(D)	(p)(2)(A)	(c)(4)(F) (d)(4)(G)	(a)(4)(C)(F)(G)(H)(J)	LAR; Obj. 3 LAW; Obj. 1, 2, 3 Math; Obj. 1, 2, 6, 7, 8, 9, 10, 11, 12, 13 Sci; Obj. 1, 2, 7, 8

Microcomputer Applications Integration Matrix

Section 4, Unit 2

Competency	Math (75.63)	Science (75.64)	Language Arts (75.61)	Social Studies (75.48)	TAAS Objectives
1	(a)(3)(A)(C) (a)(6)(E)	(p)(2)(A)	(c)(4)(F) (d)(4)(G)	(a)(4)(B)(C)(F)(H)	LAR; Obj. 4, 5 LAW; Obj. 7 Math; Obj. 1, 2, 6, 7, 8, 9, 12, 13 Sci; Obj. 2, 8
2	(a)(3)(A)(C) (a)(4)(A)(D)(E) (a)(5)(H) (a)(6)(A)(E) (b)(1)(C) (b)(2)(A)(B)(C) (b)(7)(A)(B) (c)(3)(C)(D) (d)(10)(D) (i)(1)(A)(B) (i)(3)(A)(B)(C)(D)(E) (F)(G)	(p)(1)(E) (p)(2)(A)(E)	(c)(4)(F) (d)(4)(G)	(a)(2)(K) (a)(3)(B) (a)(4)(A)(B)(C)(E)(F)(G) (H)(J)	LAR; Obj. 5 LAW; Obj. 7 Math; Obj. 1, 2, 6, 7, 8, 9, 10, 11, 12, 13 Sci; Obj. 1, 2, 5, 8 SS; Obj. 9, 10
3	(a)(5)(F)(G) (a)(6)(E) (b)(1)(A) (b)(2)(B)	(g)(5)(B) (h)(7)(A) (p)(2)(A)	(d)(4)(G)	(a)(4)(A)(B)(C)(F)(G)(H) (J)	LAR; Obj. 3, 4, 5 LAW; Obj. 1 Math; Obj. 1, 2, 3, 5, 11, 12, 13 Sci; Obj. 1, 2, 3, 8 SS; Obj. 5, 7, 8 ,9

Microcomputer Applications Integration Matrix

Section 5, Unit 1

Competency	Math (75.63)	Science (75.64)	Language Arts (75.61)	Social Studies (75.48)	TAAS Objectives
1			(b)(4)(A)		LAR; Obj. 1
2		(c)(7)(B) (p)(2)(A) (p)(4)(D)	(c)(4)(F) (d)(1)(A) (d)(4)(G) (e)(2)(D)	(a)(4)(A)(B)(C)(D)(F)(H)(J)	LAR; Obj. 3, 4, 5 LAW; Obj. 1-7 Sci; Obj. 1, 3, 8 SS; Obj. 5, 6
3		(p)(2)(A)	(d)(1)(A) (d)(4)(G)	(a)(2)(A)(C)(K)(L) (a)(4)(A)(B)(C)(D)(F)(H)(J)	LAR; Obj. 2, 3 LAW; Obj. 1, 2, 3, 4 Sci; Obj. 1, 2, 8 SS; Obj. 5

Microcomputer Applications Integration Matrix

Section 5, Unit 2

Competency	Math (75.63)	Science (75.64)	Language Arts (75.61)	Social Studies (75.48)	TAAS Objectives
1			(b)(4)(A)		LAR; Obj. 1
2		(c)(7)(B)(C) (h)(7)(B) (p)(2)(A)	(d)(1)(A) (d)(4)(G)	(a)(1)(A) (a)(2)(C) (a)(4)(A)(B)(D)(E)(F)(G)(H)(J)	LAR; Obj. 2, 3, 5, 6 LAW; Obj. 1, 2, 3, 4 Sci; Obj. 1, 2, 3, 8 SS; Obj. 5
3		(c)(7)(B)(C) (h)(7)(B) (p)(2)(A)	(d)(1)(A) (d)(4)(G)	(a)(1)(A) (a)(2)(C) (a)(4)(A)(B)(D)(E)(F)(G)(H)(J)	LAR; Obj. 2, 3, 5, 6 LAW; Obj. 1, 2, 3, 4 Sci; Obj. 1, 2, 3, 8 SS; Obj. 5
4		(c)(7)(B)(C) (h)(7)(A) (p)(2)(E)	(d)(1)(A) (d)(4)(G)	(a)(1)(A) (a)(2)(C)(G) (a)(4)(A)(B)(E)(F)(G)(H)(J)	LAR; Obj. 1-6 LAW; Obj. 1-7 Sci; Obj. 1, 2, 3, 4, 8 SS; Obj. 6, 7, 9 ,10

Microcomputer Applications Integration Matrix
Section 5, Unit 3

Competency	Math (75.63)	Science (75.64)	Language Arts (75.61)	Social Studies (75.48)	TAAS Objectives
1			(b)(4)(A)		LAR; Obj. 1
2	(a)(1)(A)(B) (a)(3)(B)(C) (a)(5)(C) (c)(4)(C) (d)(1)(A)(B) (g)(3)(B)	(p)(2)(A)	(c)(4)(F) (d)(4)(G)	(a)(2)(C)(D)(E)(K)(L) (a)(4)(A)(B)(C)(D)(F)(G)(H)(J)	LAR; Obj. 2, 3, 4 LAW; Obj. 1-7 Math; Obj. 1, 3, 4, 10, 11, 12, 13 Sci; Obj. 6, 7 SS; Obj. 5, 6, 10
3	(a)(1)(A)(B) (a)(3)(B)(C) (a)(5)(C) (c)(4)(C) (d)(1)(A)(B) (g)(3)(B)	(p)(2)(A)	(c)(4)(F) (d)(4)(G)	(a)(2)(C)(D)(E)(K)(L) (a)(4)(A)(B)(C)(D)(F)(G)(H)(J)	LAR; Obj. 2, 3, 4 LAW; Obj. 1-7 Math; Obj. 1, 3, 4, 10, 11, 12, 13 Sci; Obj. 6, 7 SS; Obj. 5, 6, 10

Microcomputer Applications Integration Matrix

Section 5, Unit 4

Competency	Math (75.63)	Science (75.64)	Language Arts (75.61)	Social Studies (75.48)	TAAS Objectives
1			(b)(4)(A)		LAR; Obj. 1
2		(c)(7)(B)(C) (h)(7)(B) (p)(2)(A)	(d)(1)(A) (d)(4)(G)	(a)(1)(A) (a)(2)(C) (a)(4)(A)(B)(C)(D)(E)(F)(G)(H)(J)	LAR; Obj. 2, 3, 5, 6 LAW; Obj. 1, 2, 3, 4 Sci; Obj. 1, 2, 3, 8 SS; Obj. 5
3		(c)(7)(B)(C) (h)(7)(B) (p)(2)(A)	(b)(1)(A) (d)(4)(G)	(a)(1)(A) (a)(2)(C) (a)(4)(A)(B)(C)(D)(F)(G)(H)(J)	LAR; Obj. 2, 3, 5, 6 LAW; Obj. 1, 2, 3, 4 Sci; Obj. 1, 2, 3, 8 SS; Obj. 5
4	(a)(1)(A)(B) (a)(3)(B)(C) (a)(5)(C) (c)(4)(C) (d)(1)(A)(B) (g)(3)(B)	(p)(2)(A)	(c)(4)(F) (d)(4)(G)	(a)(2)(C)(D)(E)(K)(L) (a)(4)(A)(B)(C)(D)(F)(G)(H)(J)	LAR; Obj. 2, 3, 4 LAW; Obj. 1-7 Math; Obj. 1, 3, 4, 10, 11, 12, 13 Sci; Obj. 6, 7 SS; Obj. 5, 6, 10

Microcomputer Applications Integration Matrix

Section 6, Unit 1

Competency	Math (75.63)	Science (75.64)	Language Arts (75.61)	Social Studies (75.48)	TAAS Objectives
1		(p)(2)(A)	(b)(4)(A) (d)(1)(A) (d)(4)(G) (e)(2)(D)	(a)(4)(A)(B)(D)(F)(G)(H)(J)	LAR; Obj. 1, 2, 3 LAW; Obj. 1-7 Sci; Obj. 1, 2, 3, 8 SS; Obj. 5, 6
2 (a,b,c)	(a)(1)(A)(B) (a)(3)(A)(B)(C) (a)(5)(C)(F) (a)(6)(E) (b)(1)(A) (c)(4)(C) (d)(1)(A)(B) (g)(3)(A)(B)	(p)(2)(A)(E)	(c)(4)(F) (d)(1)(A) (d)(4)(G)	(a)(1)(A)(D) (a)(2)(C)(E)(K) (a)(4)(A)(B)(C)(D)(F)(G)(H)(J)	LAR; Obj. 2, 3, 4 LAW; Obj. 1-7 Math; Obj. 1-13 Sci; Obj. 1-8 SS; Obj. 5, 6, 7

Competency Checklist

Common Essential Elements

(Mastery = 4, Non-Mastery = 1)

COMPETENCIES

I. Leadership

4 3 2 1 1. Explain the role of leadership in our society.
4 3 2 1 2. List advantages and disadvantages of becoming a leader.
4 3 2 1 3. Name and describe three leadership styles.
4 3 2 1 4. List the basic principles of parliamentary procedure.
4 3 2 1 5. Describe the essentials of a good meeting.
4 3 2 1 6. Explain the function and purpose of committees.
4 3 2 1 7. Write the order of business for a meeting.
4 3 2 1 8. Participate in orderly meetings conducted according to parliamentary procedure.
4 3 2 1 9. Identify characteristics and responsibilities of effective group members.
4 3 2 1 10. Plan and conduct leadership activities.

II. Successful Employment

4 3 2 1 1. Identify skills necessary for employment in a business situation.
4 3 2 1 2. Identify sources to use when seeking employment.
4 3 2 1 3. Prepare a resume and a letter of application.
4 3 2 1 4. Complete an application form.
4 3 2 1 5. Demonstrate proper interview and communication techniques.
4 3 2 1 6. Describe the components of ethical conduct on the job.
4 3 2 1 7. Apply principles of time management.
4 3 2 1 8. Describe the importance of organizational policies and procedures.

III. Entrepreneurship

4 3 2 1 1. Define terms/traits associated with entrepreneurship concepts and skills.
4 3 2 1 2. Describe why learning entrepreneurship concepts and skills is important.
4 3 2 1 3. Discuss those reasons why starting a small business may be beneficial.
4 3 2 1 4. Recognize those personality traits which are common to successful entrepreneurs.
4 3 2 1 5. Discuss those factors which should be considered before opening a small business.

COMPETENCIES

4 3 2 1 6. Compare and contrast the risks and rewards of entrepreneurship.
4 3 2 1 7. Recognize the difference between the various economic systems.
4 3 2 1 8. Explain the role of small business in the free enterprise economic system.

IV. Safety

1. Identify general safety procedures and concepts in the business working world, including:
4 3 2 1 a. Describe accident causes and prevention.
4 3 2 1 b. Identify government involvement in safety.
4 3 2 1 c. Identify safe working practices employed in the office.
4 3 2 1 d. Recognize areas of computer safety.

V. Human Relations and Personality Development

4 3 2 1 1. Describe grooming habits, personal hygiene, and clothing wardrobe appropriate for office.
4 3 2 1 2. Identify factors of human relations that allow understanding of self and others.
4 3 2 1 3. Analyze basic human relation problems as they relate to business success.

VI. Personal and Business Management.

4 3 2 1 1. Explain the management process and identify the role and functions of business management including the lines of authority and effective supervisory techniques.
4 3 2 1 2. Explain how management assists in reaching personal and family goals.
4 3 2 1 3. Describe the role of management in controlling stress.
4 3 2 1 4. Identify and understand different financial institutions.
4 3 2 1 5. Identify and understand personal checking accounts.
4 3 2 1 6. Identify and understand the personal loan application processes.

Common Essential Elements Integration Matrix

Leadership

Competency	Math (75.63)	Science (75.64)	Language Arts (75.61)	Social Studies (75.48, 75.68)	TAAS Objectives
1			(d)(1)(A) (d)(4)(G)	(a)(1)(A)(D) (a)(2)(A)(C)(D)(E)(G)(J)(K)(L) (a)(4)(D)(H)	LAR; Obj. 3, 4 LAW; Obj. 1, 2, 3, 4 SS; Obj. 1, 3, 6, 8
2			(d)(1)(A) (d)(4)(G)	(a)(4)(A)(B)(D)(E)(F)(G)(H)(J)	LAR; Obj. 2, 3, 4, 5 LAW; Obj. 1, 2, 3, 4 SS; Obj. 6, 7, 8, 9, 10
3			(d)(1)(A) (d)(4)(G)	(a)(4)(A)(B)(D)(E)(F)(G)(H)(J)	LAR; Obj. 2, 3, 4, 5 LAW; Obj. 1, 2, 3, 4 SS; Obj. 6, 7, 8, 9, 10
4			(d)(1)(A) (d)(4)(G)	(a)(4)(A)(B)(D)(E)(F)(G)(H)(J)	LAR; Obj. 2, 3, 4, 5 LAW; Obj. 1, 2, 3, 4 SS; Obj. 6, 7, 8, 9, 10
5			(d)(1)(A) (d)(4)(G)	(a)(4)(A)(B)(D)(E)(F)(G)(H)(J)	LAR; Obj. 2, 3, 4, 5 LAW; Obj. 1, 2, 3, 4 SS; Obj. 1, 6, 7, 8, 9, 10
6			(d)(1)(A) (d)(4)(G)	(a)(4)(A)(B)(D)(E)(F)(G)(H)(J)	LAR; Obj. 2, 3, 4, 5 LAW; Obj. 1, 2, 3, 4 SS; Obj. 1, 6, 7, 8, 9, 10
7			(d)(1)(A)	(a)(4)(A)(D)(J)	LAW; Obj. 1, 2
8				(k)(2)(D)(E)	SS; Obj. 1, 3, 9, 10
9			(d)(1)(A)	(a)(1)(A)(D) (a)(2)(C)(D)(K)(L) (a)(4)(A)(D)(E)(F)(H)(J) (k)(2)(D)(E)	LAR; Obj. 2, 3, 4, 5, 6 LAW; Obj. 1, 2, 3, 4 SS; Obj. 1, 3, 6, 9, 10

Common Essential Elements Integration Matrix

Successful Employment

Competency	Math (75.63)	Science (75.64)	Language Arts (75.61)	Social Studies (75.48, 75.68)	TAAS Objectives
1			(d)(1)(A) (d)(4)(G)	(a)(4)(A)(D)(F)(J)	LAR; Obj. 2, 3, 4, 5, 6 LAW; Obj. 1, 2, 3, 4 SS; Obj. 6, 10
2			(d)(1)(A) (d)(4)(G)	(a)(4)(A)(D)(F)(J)	LAR; Obj. 2, 3, 4, 5, 6 LAW; Obj. 1, 2, 3, 4 SS; Obj. 6, 10
3			(d)(1)(A) (d)(4)(G)	(a)(4)(A)(D)(H)(J)	LAR; Obj. 3, 5 LAW; Obj. 1-7
4			(c)(4)(F) (d)(1)(A)	(a)(4)(D)(F)(H)(J)	LAR; Obj. 4, 5 LAW; Obj. 1, 2 SS; Obj. 9, 10
5			(c)(4)(F) (e)(2)(D)	(a)(4)(C)(F)(H)(J)	
6		(p)(1)(E) (p)(2)(E) (p)(4)(D)	(c)(4)(F) (d)(4)(G)	(a)(1)(A)(D) (a)(2)(A)(C)(K)(L) (a)(3)(E) (a)(4)(A)(D)(E)(F)(G)(H)(J)	LAR; Obj. 2, 3, 4, 5, 6 LAW; Obj. 1, 2, 3, 4 Sci; Obj. 1, 2, 3, 4, 8 SS; Obj. 1, 3, 5, 6, 9
7			(d)(4)(G)	(a)(4)(A)(F)(J)	LAR; Obj. 4, 5 LAW; Obj. 1 Math; Obj. 1, 10, 11, 13
8			(d)(1)(A) (d)(4)(G)	(a)(1)(A)(D) (a)(2)(C)(D)(E)(G)(K)(L) (a)(3)(E) (a)(4)(D)(F)(G)(H)(J)	LAR; Obj. 3, 4, 5, 6 LAW; Obj. 1, 2, 3, 4 SS; Obj. 1, 3, 6, 9, 10

Common Essential Elements Integration Matrix
Entrepreneurship

Competency	Math (75.63)	Science (75.64)	Language Arts (75.61)	Social Studies (75.48)	TAAS Objectives
1			(b)(4)(A)		LAR; Obj. 1
2			(d)(1)(A) (d)(4)(G)	(a)(4)(A)(D)(F)(H)(J) (b)(3)(D)	LAR; Obj. 2, 3, 5, 6 LAW; Obj. 1, 2, 3, 4 SS; Obj. 1, 2, 6, 9, 10
3			(d)(1)(A) (d)(4)(G)	(a)(4)(A)(D)(F)(H)(J) (b)(3)(D)	LAR; Obj. 2, 3, 5, 6 LAW; Obj. 1, 2, 3, 4 SS; Obj. 1, 2, 6, 9, 10
4			(d)(1)(A) (d)(4)(G)	(a)(4)(A)(B)(D)(F)(G)(J) (b)(3)(D) (i)(3)(A)	LAR; Obj. 2, 4, 5 LAW; Obj. 1, 2
5			(d)(1)(A) (d)(4)(G)	(a)(1)(A)(D) (a)(2)(A)(C)(D)(J)(K)(L) (a)(3)(B)(E) (a)(4)(A)(D)(F)(H)(J) (b)(3)(D) (i)(3)(C)	LAR; Obj. 2, 3, 4, 5, 6 LAW; Obj. 1, 2, 3, 4 SS; Obj. 1, 2, 6, 8, 9, 10
6			(d)(1)(A) (d)(4)(G)	(a)(3)(B)(E) (a)(4)(A)(D)(E)(F)(G)(H)(J)	LAR; Obj. 2, 4, 5, 6 LAW; Obj. 1, 2, 3, 4 SS; Obj. 6, 8, 9, 10
7			(d)(1)(A) (d)(4)(G)	(a)(3)(B)(E) (a)(4)(A)(D)(E)(F)(G)(H)(J)	LAR; Obj. 2, 4, 5, 6 LAW; Obj. 1, 2, 3, 4 SS; Obj. 6, 8, 9, 10
8			(d)(1)(A) (d)(4)(G)	(a)(2)(A)(C)(E)(G)(J)(K)(L) (a)(3)(B)(E) (a)(4)(D)(F)(G)(H)(J)	LAR; Obj. 3, 4, 5, 6 LAW; Obj. 1-7 SS; Obj. 1, 2, 6, 9, 10

Common Essential Elements Integration Matrix

Safety

Competency	Math (75.63)	Science (75.64)	Language Arts (75.61)	Social Studies (75.48)	TAAS Objectives
1		(c)(7)(B)(C) (n)(2)(B) (n)(4)(A) (p)(1)(E) (p)(4)(D)	(d)(1)(A) (d)(4)(G)		LAR; Obj. 3, 4, 5 LAW; Obj. 1, 2, 3, 4 Sci; Obj. 8
a		(c)(7)(B)(C) (n)(2)(B) (n)(4)(A) (p)(1)(E) (p)(4)(D)	(d)(1)(A) (d)(4)(G)		LAR; Obj. 2, 3, 4, 5, 6 LAW; Obj. 1, 2, 3, 4 Sci; Obj. 2, 3, 8
b		(n)(2)(B) (n)(4)(A) (p)(1)(E)	(d)(1)(A) (d)(4)(G)	(a)(2)(C)(D)(K)(L) (a)(4)(D)(F)(H)	LAR; Obj. 2, 3, 4 LAW; Obj. 1, 2, 3, 4 SS; Obj. 1, 3, 6
c		(c)(7)(B)(C) (n)(2)(B) (n)(4)(A) (p)(1)(E) (p)(4)(D)	(d)(1)(A) (d)(4)(G)		LAR; Obj. 3, 4, 5 LAW; Obj. 1, 2, 3, 4 Sci; Obj. 8
d		(n)(2)(B) (n)(4)(A) (p)(1)(E)	(d)(1)(A) (d)(4)(G)		LAR; Obj. 2, 3, 4 LAW; Obj. 1, 2, 3, 4 Sci; Obj. 1, 3, 4, 8

Common Essential Elements Integration Matrix

Human Relations and Personality Development

Competency	Math (75.63)	Science (75.64)	Language Arts (75.61)	Social Studies (75.48, 75.68)	TAAS Objectives
1			(d)(1)(A) (d)(4)(G)	(a)(4)(A)(D)(J) (i)(3)(A)	LAR; Obj. 3, 4, 5, 6 LAW; Obj. 1, 2, 3, 4 SS; Obj. 6, 10
2			(d)(1)(A) (d)(4)(G)	(a)(4)(A)(D)(J) (i)(3)(A)	LAR; Obj. 3, 4, 5, 6 LAW; Obj. 1, 2, 3, 4 SS; Obj. 6, 10
3			(d)(1)(A) (d)(4)(G)	(a)(4)(A)(D)(J) (b)(3)(D)	LAR; Obj. 3, 4, 5, 6 LAW; Obj. 1, 2, 3, 4 SS; Obj. 2, 6, 10

Common Essential Elements Integration Matrix

Personal and Business Management

Competency	Math (75.63)	Science (75.64)	Language Arts (75.61)	Social Studies (75.48, 75.68)	TAAS Objectives
1			(d)(1)(A) (d)(4)(G)	(a)(1)(A) (a)(2)(C)(K)(L) (a)(4)(A)(D)(F)(G)(H)(J) (b)(3)(D) (k)(2)(D)(E)	LAR; Obj. 2, 3, 4, 5 LAW; Obj. 1, 2, 3, 4 SS; Obj. 1, 6, 8, 9, 10
2			(d)(1)(A) (d)(4)(G)	(a)(4)(A)(D)(F)(H) (i)(3)(C)	LAR; Obj. 3, 4, 5 LAW; Obj. 1, 2, 3, 4 SS; Obj. 6, 9, 10
3			(d)(1)(A) (d)(4)(G)	(a)(4)(A)(D)(F)(H)	LAR; Obj. 3, 4, 5 LAW; Obj. 1, 2, 3, 4 SS; Obj. 6, 8, 10
4	(i)(1)(A) (i)(2)(C)(F)		(d)(1)(A) (d)(4)(G)	(a)(3)(E) (a)(4)(A)(D)(F)(G)(H)(J)	LAR; Obj. 3, 4, 5 LAW; Obj. 1, 2, 3, 4 SS; Obj. 2, 6, 7, 8, 9, 10
5	(a)(3)(A)(C) (a)(4)(E) (a)(5)(H) (b)(5)(A) (c)(3)(D) (i)(1)(A)		(c)(4)(F) (d)(4)(G)	(a)(4)(C)(F)(J)	LAR; Obj. 3, 4 LAW; Obj. 1, 2 Math; Obj. 1, 2, 6, 7, 8, 9, 10, 11, 12, 13 SS; Obj. 2, 6
6	(a)(5)(H) (b)(2)(B)(C) (b)(4)(B) (b)(5)(A) (c)(3)(D) (i)(1)(A) (i)(2)(A)(C)(E)(F)		(c)(4)(F) (d)(4)(G)	(a)(4)(C)(F)(J)	LAR; Obj. 3, 4 LAW; Obj. 1, 2 Math; Obj. 1, 2, 6, 7, 8, 9, 10, 11, 12, 13 SS; Obj. 2, 6

COMPLIANCE STATEMENT

TITLE VI, CIVIL RIGHTS ACT OF 1964; THE MODIFIED COURT ORDER, CIVIL ACTION 5281, FEDERAL DISTRICT COURT, EASTERN DISTRICT OF TEXAS, TYLER DIVISION
Reviews of local education agencies pertaining to compliance with Title VI Civil Rights Act of 1964 and with specific requirements of the Modified Court Order, Civil Action No. 5281, Federal District Court, Eastern District of Texas, Tyler Division are conducted periodically by staff representatives of the Texas Education Agency. These reviews cover at least the following policies and practices:

(1) acceptance policies on student transfers from other school districts;

(2) operation of school bus routes or runs on a non-segregated basis;

(3) nondiscrimination in extracurricular activities and the use of school facilities;

(4) nondiscriminatory practices in the hiring, assigning, promoting, paying, demoting, reassigning, or dismissing of faculty and staff members who work with children;

(5) enrollment and assignment of students without discrimination on the basis of race, color, or national origin;

(6) nondiscriminatory practices relating to the use of a student's first language; and

(7) evidence of published procedures for hearing complaints and grievances.

In addition to conducting reviews, the Texas Education Agency staff representatives check complaints of discrimination made by a citizen or citizens residing in a school district where it is alleged discriminatory practices have occurred or are occurring.

Where a violation of Title VI of the Civil Rights act is found, the findings are reported to the Officer for Civil Rights, Department of Health, Education, and Welfare.

If there is a direct violation of the Court Order in Civil Action No. 5281 that cannot be cleared through negotiations, the sanctions required by the Court Order are applied.

TITLE VII, CIVIL RIGHTS ACT OF 1964; EXECUTIVE ORDERS 11246 AND 11375; TITLE IX, 1973 EDUCATION AMENDMENTS; REHABILITATION ACT OF 1973 AS AMENDED; 1974 AMENDMENTS TO THE WAGE-HOUR LAW EXPANDING THE AGE DISCRIMINATION IN EMPLOYMENT ACT OF 1967; AND VIETNAM ERA VETERANS READJUSTMENT ASSISTANCE ACT OF 1972 AS AMENDED IN 1974.
It is the policy of the Texas Education Agency to comply fully with the nondiscrimination provisions of all federal and state laws and regulations by assuring that no person shall be excluded from consideration for recruitment, selection, appointment, training, promotion, retention, or any other personnel action, or be denied any benefits or participation in any programs or activities which it operates on the grounds of race, religion, color, national origin, sex, handicap, age, or veteran status (except where age, sex, or handicap constitute a bona fide occupational qualification necessary to proper and efficient administration). The Texas Education Agency makes positive efforts to employ and advance in employment all protected groups.